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FORMATION AND TRANSITION OF THE DUAL ECONOMY IN JAPAN*

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I. *Problems*

The Japanese economy of the 1960's is, in a sense, in a period of transition because the wide interscale wage differential of firms has begun to be greatly reduced and the characteristic feature of the past century (except during wars) of surplus labor is now being replaced by a labor-shortage situation. Although labor markets, small industries and agriculture have long retained some pre-modern factors or residuals of the old ways, they are now forced to transform themselves because of this labor shortage—which was initiated by the super-boom of 1955–61. This process of transformation is destined to be further intensified in the future due to the declining tendency in the rate of increase of the labor force. Therefore, various aspects of the so-called dual economy are expected to disappear within the coming ten years, although this process will create tremendous friction in every field of the economy such as: the rapid rise of consumer prices; the difficulties confronting occupational changes in small enterprises; the shortage of labor in agriculture due to the exodus of youth from villages; the difficulties of expanding farming scale due to the lack of efficient labor; and the juxtaposition of the strengthened position of labor unions and the increasing desire of the entrepreneurs to change drastically the present employment and wage systems (the "life-time commitment" as well as the strong seniority system in wage-payments), etc.

I shall first be concerned with the causes or background which accounts for the dual structure of the Japanese economy in the past, as well as historical explanation why some symptoms of the dual economy, e.g., interscale wage differentials, were intensified in the manufacturing sector in the 1920's and have continued until the present. Secondly, we shall explore various aspects of the dual economy in the labor market, small industry, and the capital market. Thirdly, we shall take up the current phenomena namely, the transition taking place in the dual economy, which is happening rapidly as labor shortage becomes more and more intensified and the level of the Japanese economy approaches those of the Western countries. Before going into the above, however, we shall analyze the present state of the employment and wage structures in the Japanese economy; then, we shall proceed to set up a hypothesis which will explain the historical process as well as the present status of the dual economy.

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* This paper was originally prepared when I was with the East West Center, the University of Hawaii, as a Senior Specialist during the period September 1965 to June 1966, and is based mostly on my publications in Japanese during the past few years. I have taken the liberty of making minor changes in the present text, particularly with respect to the statistical data.

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II. *Structures of Employment and Wages*

Although the term dual economy has been understood so far to mean the coexistence of modern big firms and the traditional or less modernized smaller firms, including agriculture, the focus has been directed in Japan more and more upon the dualistic or multi-layer employment and wage structures of the manufacturing sector. We shall return later to the problem concerning the relationship between agriculture and smaller enterprises in the non-agricultural sectors, but in this section, we shall concentrate on the quantitative aspects in the non-agricultural sectors, particularly in manufacturing.

Table 1 computes the proportion of individual proprietors and family workers, who belong to the non-agricultural category of employed labor force, based on the Census of Population or the Labor Force Survey in various countries. We may assume that, in this table, the higher this ratio, the less modernized is the employment structure. Although the above-mentioned ratio for Japan is 26.5% for 1955, 22.6% for 1960 and 21.6% for 1965 and is lower

TABLE 1. RATIO OF INDIVIDUAL PROPRIETORS AND FAMILY WORKERS TO TOTAL EMPLOYED LABOR FORCE IN THE NON-AGRICULTURAL SECTORS

Thailand	(1960)	45.2%
The Philippines	(1961)	36.8
Turkey	(1960)	31.0
Greece	(1961)	30.6
Venezuela	(1961)	23.8
Mexico	(1960)	23.2
Israel	(1961)	22.6
Japan	(1955)	26.5
Japan	(1965)	21.6
Portugal	(1960)	22.4
Italy	(1962)	21.5
Argentina	(1947)	20.2
Puerto-Rico	(1963)	17.4
Netherlands	(1960)	14.1
Austria	(1961)	13.1
West Germany	(1961)	12.8
Australia	(1954)	11.8
Norway	(1960)	10.3
Canada	(1962)	10.0
U.S.A.	(1962)	9.9
Ireland	(1960)	9.8
Sweden	(1960)	9.0
U.K.	(1951)	6.2

Sources: ILO, *Yearbook of Labors Statistics*, 1963 and, for Japan, *the Census of Population.*

than the ratios given for Thailand (45.2%), the Philippines (36.8%), Turkey (31%), Greece (30.6%), etc., it is very close to the ratios given for Venezuela, Mexico, Israel, and Portugal (22–23%)—countries which can be considered even less developed than Japan, industrially. In this respect, we find this conspicuous feature that Japan, which is highly industrialized, still preserves pre-modern traits or so it seems, at least, from the quantitative measures indicated in Table 1.

In Table 2, we see the employment structure by the size of establishment in manufacturing of six selected countries: the United States, Japan, Denmark, West Germany, the United Kingdom, and Norway. According to this table, the proportion of the size "less than one hundred employees" of the total number of employees is 27% in the United States, 20.3% in the United Kingdom, and 36.1% in West Germany, but it is 52.8% in Japan, indicating that Japan has an employment pattern more strongly biased in the lower-size establishments than do other advanced countries. The same ratio was 58.8% in 1956. However, it is not impossible to find similar cases even among Western countries, for the ratio is 53.2% in Norway and 47.2% in Denmark, which figures fall between Japan, on the one hand, and the United States, the United Kingdom, and West Germany, on the other. In this case, the concentration of employment in the lower-size establishments is not peculiar only to Japan. In this sense, the pheonomenon of dual economy has not come to stay for ever as is felt by some Japanese

TABLE 2. EMPLOYMENT STRUCTURE IN MANUFACTURING IN SIX COUNTRIES

Size of establishment	U.S.A. (1958)	Japan (1964)	Denmark (1955)	West Germany (1961)	U.K. (1958)	Norway (1958)
	thousand %	thousand %	thousand %	thousand %	thousand %	thousand %
1-49 Employees	2,645.3(17.2)	4,108 (41.5)	106.1 (33.6)	2,757.6 (29.0)	897 (11.7)	132.4 (40.7)
50- 99	1,512.8(9.8)	1,115 (11.3)	42.9 (13.6)	676.8 (7.1)	658 (8.6)	40.6 (12.5)
100-499	4,647.3(30.2)	2,183 (22.0)	96.2 (30.4)	2,260.2 (23.8)	2,428 (31.6)	90.2 (27.7)
500-999	1,893.3(12.3)	808 (8.2)	29.9 (9.4)	1,007.0 (10.6)	1,043 (13.6)	62.1 (19.1)
1,000 and over	4,695.1(30.5)	1,687 (17.0)	41.3 (13.0)	2,806.0 (29.5)	2,654 (34.5)	
Total	15,393.8(100.0)	9,901(100.0)	316.3(100.0)	9,507.6(100.0)	7,680(100.0)	325.3(100.0)

Sources: U.S.A., *Census of Manufactures*, 1958; Japan, *Kōgyō Tōkeihyō* (Census of Manufactures), 1964; Denmark *Statistiske Efterretninger*, 2 Juli, 1959; West Germany, *Statistisches Jahrbuch für Bundesrepublik Deutschland*, 1963; U.K., *Census of Production*, 1958; Norway, *Norges Industri, Produksjonsstatistikk 1958*, 1960.

Note: In the size "1-29" in West Germany, those who engaged in Handwerk (handicraft) amounting to 1884, 300 men are included. If it is excluded, the proportional percentages become, from the lowest size, 11.5%, 8.8%, 29.6%, 13.2%, and 36.8%, respectively.

Marxist economists. Such a phenomenon can be improved as the economy grows, although the improvement process will be accompanied by some frictions. It follows from this observation, that in countries such as Greece, Spain and Portugal, the interscale employment structure in manufacturing might be equally or more biased toward the lower-size establishments than it is in Japan. Taking into account also that in some underdeveloped countries like India, Ceylon, and the Philippines, such a tendency is much more conspicuous than in others, it may not be deniable that, in general, as the economy grows the interscale employment structure will tend to move towards the pattern existing in advanced countries.

Another quantitative feature of the labor market in Japan, particularly with reference to

manufacturing, is found in the wage differential by size of establishment. As Table 3 indicates, the wage differential in manufacturing (if we take the ratio of the size "4-9

TABLE 3. WAGE DIFFERENTIAL BY SIZE OF ESTABLISHMENT IN MANUFACTURING JAPAN

Size of establishment	1951	1958	1961	1962	1965
1,000 employees and over	100.0	100.0	100.0	100.0	100.0
500-999	91.4	75.1	78 8	82.8	84.4
200-499	79.2	65.8	71.3	74.9	78.1
100-199	67.8	55.6	61.9	64.7	70.0
50- 99	59.8	50.4	58.6	63.3	66.3
30- 49	54.3	46.7	55.7	61.0	63.8
20- 29	50.5	44.1	52.7	57.9	—
10- 19	46.6	41.5	47.3	54.8	—
4- 9	42.3	37.8	44.9	50.2	—

Source: Ministry of International Trade and Industry, *Kōgyō Tōkeihyō* (Census of Manufactures). The computation is based on the average wages which is derived by dividing the wages and salaries by the monthly average of regular employees. The 1965 figures are based on the short summary announced in advance, and in the computation of average wages, the number of employees at the end of 1965 is used.

employees" to that of "1,000 employees and over") was 42.3% in 1951, which widened to 37.8% in 1958, but narrowed again to 44.9% in 1961, and to 50.2% in 1962 owing to an increasing shortage of labor from around 1959. This wage differential is evidently greater than those in the United Kingdom or the United States wherein the relative difference between the highest size and the lowest remains within the margin of 20 per cent. Table 4 illustrates the wage differentials in Japan, the United States, the United Kingdom, and West Germany. The differential is wider in West Germany than in the United States, but the differential of

TABLE 4. WAGE DIFFERENTIAL IN MANUFACTURING IN FOUR ADVANCED COUNTRIES

	U.K. (1954)	Japan (1960)	U.S.A. (1958)	W. Germany (1954)
1,000 and over	100.0	100.0	100.0	100.0
500-999	89.3	78.7	85.0	
300-499	86.0			91.6
200-299	83.0	64.4	77.9	
100-199	82.0			
50- 99	80.9	55.0	74.4	
25- 49	80.3	48.5	71.1	87.8
10- 24	79.3			
4- 9	—	41.2	64.0	81.7
1- 3	—	—		

Sources: Japan, *Kōgyō Tōkeihyō* (Census of Manufactures), 1960; U.K., *Census of Production*, 1954; U.S.A., *Census of Manufactures*, 1958; W. Germany, *Statistisches Jahrbuch für Bundesrepublik Deutschland*, 1960.

the latter is a bit wider than the United Kingdom's. Japan's differential is widest in its relative difference.

Although the interscale wage differential in underdeveloped countries, such as the Philippines, India, Ceylon, etc., is almost equally wide as it was in Japan during the postwar period, it is not clear as to what the situations are in medium-industrialized countries. In this respect, the data for Danish manufacturing indicated in Table 5 are very suggestive. According to this data, in Denmark, the ratio between the highest and the lowest of average wages per employee is 100 to 66.7. Since, on the other hand, the differential in Japan was 100 vs. 37.8% in 1958, and 100 vs. 44.9% in 1961, the interscale wage differential is clearly greater in Japan than in Denmark, but the difference is not so large. In this sense, the Danish wage differential falls between Japan and West Germany.

As already indicated, the interscale employment structure in Denmark is also of a pattern concentrating in lower-size establishments. It should be noted that in Denmark the proportion of "less than 100 employees" size is 47.2%, while it is 52~58% in Japan, and this should be understood in close correspondence with the fact that the wage differentials in the two countries are relatively close. It may be possible that, in the short run, the interscale employment structure may change inversely with the interscale wage differential but both may be expected to move *pari-passu* in the long run.

An example of Danish data again seems to illustrate that the interscale wage differential in Japan will not be so peculiar a phenomenon as we casually feel. The fact that a wage differential which has a similarity with that of Japan prevails in the present underdeveloped countries will also strengthen this impression.

TABLE 5. WAGE DIFFERENTIAL IN DANISH MANUFACTURING (1955)

unit: Kroner

Size of Firms	Wages and Salaries per Employee	Corporations			Other Firms		
		Earnings Per man	Salaries Per man	Wages Per man	Earnings Per man	Salaries Per man	Wages Per man
0-10 employees	7,602 (66.7)	9,574 (84.2)	11,574 (65.6)	8,333 (81.3)	7,097 (61.9)	5,045 (31.6)	7,927 (76.3)
10-25	8,959 (78.7)	10,131 (89.1)	13,746 (77.9)	8,623 (84 2)	8,346 (72.8)	8,454 (53.0)	8,316 (80.1)
25-50	9,483 (83.3)	10,052 (88.4)	14,164 (80.3)	8,695 (84.9)	8,904 (77.6)	11,162 (69.9)	8,319 (80.1)
50-100	9,923 (87.1)	10,185 (89.6)	14,809 (84.0)	8,837 (86.2)	9,501 (82.8)	12,815 (80.3)	8,648 (83.3)
100-200	10,300 (90.4)	10,475 (92.1)	16,321 (92.6)	8,893 (86.8)	9,765 (85.1)	13,890 (87.0)	8,841 (85.1)
200-500	10,236 (89.9)	10,425 (91.7)	16,288 (92.4)	9.091 (88.7)	9,251 (80.7)	13,745 (86.1)	8,213 (79.1)
500-1,000	11,083 (97.3)	11,007 (96.8)	17,395 (98.6)	9,335 (91.1)	11,421 (99.6)	15,351 (96.2)	10,679 (102.8)
1,000 employees and over	11,391 (100.0)	11,371 (100.0)	17,635 (100.0)	10,246 (100.0)	11,471 (100.0)	15,960 (100.0)	10,387 (100.0)

Source: *Statistiske Efterretninger*, udgived af det Statistiske department, 51, Argang Nr. 32, 2 Juli 1959.

However, one point should be borne in mind. Even if a sharp interscale wage differential exists in the manufacturing sector in the present underdeveloped countries, it was not evident in Japan before World War I. Japan's wage differential expanded tremendously only from around World War I onward as is shown in Table 6. If we take this into account, we may have an impression that the formation of a sharp interscale wage differential in the present underdeveloped countries is only a postwar phenomenon, accelerated by the introduction of foreign aids and technology, and that before World II such countries probably may not have had such a sharp wage differential.

TABLE 6. INTERSCALE WAGE STRUCTURE IN PREWAR MANUFACTURING

A. Wages of Total and Male Workers in the Manufacturing Firms in Japan, 1909 and 1914

unit: *sen*. (100 *sen*=1 *yen*)

Average daily wage	Size of establishment by number of employees						
	5-9	10-29	30-49	50-99	100-499	500-999	1,000 and above
1909-All	34.2	33.2	31.7	32.5	34.0	32.5	34.4
Male	43.0	46.0	47.7	49.4	50.5	49.5	53.5
1914-All	39.5	37.0	34.6	35.4	35.9	39.3	43.4
Male	47.2	50.2	51.3	53.8	55.5	57.0	65.5

Source: Estimates by M. Umemura and A. Nakamura based on data in Nōshōmushō, *Kōjōtōkeisōhyō* (Summary of Factory Statistics); also available in Shōwadōjinkai, ed., *Wagakuni Chinginkōzō no Shitekikōsatsu* (Historical Analysis of Japanese Wage Structure), p. 471.

B. Wages of all Workers in Manufacturing Firms in Tokyo and Yokohama, 1932

unit: *yen*

		Size of firm by amount of invested capital (yen)									
		1-99	100 -499	500 -999	1,000 -1,999	2,000 -4,999	5,000 -9,999	10,000 -49,999	50,000 -99,999	100,000 -499,999	500,000 and above
Average annual earnings	1932-Tokyo	178.7	185.8	206.4	232.8	281.2	352.1	486.6	570.6	624.6	793.9
	Yokohama	121.1	158.5	178.4	241.3	297.3	373.5	445.4	560.7	671.7	771.5

Source: Estimates by A. Nakamura based on data in *Kōgyō Chōsahyō* (Survey of Manufactures), 1932; also available in Shōwadōjinkai, ed., *op. cit.*

In this sense, it is of immense interest that the steep interscale wage differential expanded in Japan even in the prewar period when foreign aid was almost negligible. If so, it should be our next step to explain the endogenous factors responsible for the emergence of such a conspicuous pattern of interscale wage differential.

III. *Hypothesis in Relation to the Labor Market*

We shall focus our attention here on why the interscale wage differential, which steeply tilted from the highest to the lowest size of establishments, has emerged in the manufacturing sector.

Since this is a phenomenon noted in the labor market, the easiest way is to analyze only the characteristics of labor market. Some peculiarities or imperfection of labor market, if any, seem to be directly responsible for the above phenomenon, so the labor economists in Japan mostly analyse the problem from this aspect. However, actually in the price-formation of one commodity, for example, not only the demand-and-supply relation of the same commodity, but also the situations in the markets of other various commodities are involved. In the same way, it seems to me that not only the labor market, but also the product and the capital markets may become factors entering into the process of formation of the wage structure, although the degree of their influences will differ. We may resort to the partial analysis approach to solve the above problem, by concentrating our attention on the labor market alone or else, we may adhere to a more general analysis by setting up a hypothesis explaining the interscale wage differential, which not only involves an analysis of the labor market, but also that of product and capital markets in a systematic way. Professor Tokutarō Yamanaka once complained that studies of small industries in Japan were apt to adopt a "truncated approach" rather than a "comprehensive approach," so to speak, forgetting that the so-called small-industry problem should be analyzed as a facet and an integral part of the structure of the national economy as a whole. It is necessary to emphasize this point, for, although we shall take up each market fairly in detail henceforward, we would like eventually to combine them into what Yamanaka calls the "comprehensive appoach." As in the theory of prices, we have a general equilibrium theory as well as a partial equilibrium theory, so in the analysis of wage differential too, we attempt to follow a general approach, although our model is descriptive rather than mathematical.

When the interscale wage differential is discussed in the analysis of labor market, the "life-time commitment" and "seniority wage-payment system" become pertinent. Once a person is employed in a big corporation, as a rule, he will continue to remain employed until his retirement. During that period, his wage or salary is destined to increase as a function of the length of his service. Wage will automatically increase in the fashion of an escalator, according to the worker's age, and not necessarily to any improvement of his skill or his contribution toward production. The "life-time commitment" and the "seniority wage-payment system" explained above are adopted mainly in the large enterprises, and not in the small-medium enterprises.

Moreover, generally, the large enterprises and the small-medium enterprises are separated in their relation to labor market. This fact is made clear by the *Report on the Survey of the Tokyo-Yokohama Industrial District* conducted in 1951–52 by Kanagawa Prefecture under the guidance of Professors K. Ōkouchi, S. Ujihara, etc. As Table 7 shows, in large factories, those workers who have experiences of working only in large factories amount to a very high ratio of 78%; in small factories, those who have experiences of working only in small factories amount to 47.7%. Therefore, roughly about half of the small-medium factory workers are

closed within their labor market. If the β ratio in the table below (21.4%)—for those who moved from small to large factories but again came back to small factories—is added to the above, it becomes almost 80%. In such a way, the large and small factory labor markets are mutually separated, and the labor migration is restricted within each labor market. In addition, the labor mobility among small-medium factories is generally very high, but that among large factories, very low.

TABLE 7. LABOR MIGRATION BETWEEN LARGE AND SMALL FACTORIES

I. A Case of Large Factories

	A	B	C	Total
Metal industry	78.4	5.3	16.3	100.0%
Chemical industry	82.0	5.1	12.9	100.0
Machinery industry	75.0	6.2	18.9	100.0
Total of industries	78.0	5.6	16.4	100.0

A. Those who have experiences of working only in large factories.
B. Those who had moved from large to small factories, and moved back to large factories.
C. Those who have moved from small to large factories.

II. A Case of Small Factories

	α	β	γ	Total
Metal industry	60.7	11.3	27.8	100.0%
Chemical industry	48.0	9.2	42.8	100.0
Machinery industry	42.0	32.0	26.0	100.0
Total of industries	47.7	21.4	30.9	100.0

α. Those who have experiences of working only in small factories.
β. Those who had moved from small to large factories, and then moved back to small factories.
γ. Those who have moved from large to small factories.

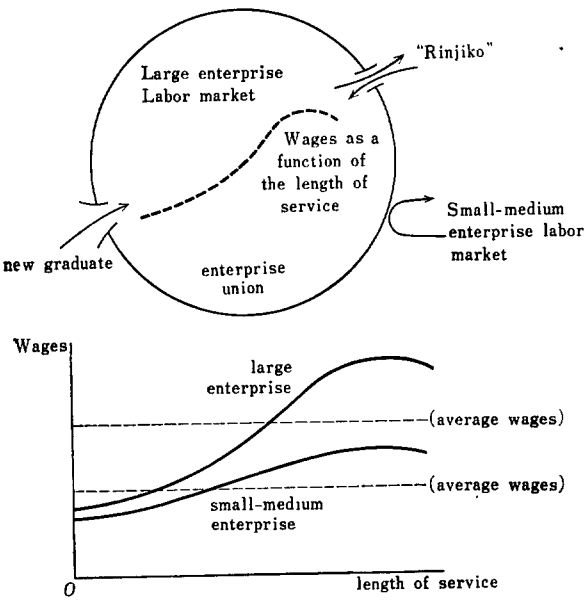
Source: Kanagawa Prefecture, *Keihin-kōgyō-chitai Chōsa-hōkokushyo,—Sangyō-rōdō-hen Kakuron* (Report on the Survey of the Tokyo-Yokohama Industrial District,—Further Descriptions on Industrial Labor), March, 1954.

Note: Large and small factories are defined as those with more than, or less than, one hundred employees, respectively.

In the field of large enterprises, the recruiting of new personnel is dependent much more upon the new graduates than it is in the field of small enterprises, because workers who seek employment in small enterprises get it through the personal help of relatives or friends. Taking these into account, the labor market of large and small-medium enterprises can be modeled like Fig. 1. Although it may be too typified it seems to explain the structure of the Japanese labor market clearly. Once the large firm employs new graduates and the latter enter the large firm, the so-called "life-time commitment" is a prevailing practice for them, whereby their wages will increase, like a sliding scale, in accordance with the increase in the length of their services. Of course, the so-called "Rinjikō" (temporarily employed) come in and out from the backdoor of large firms, and their wages are, in most cases, tremendously low, say, half of the regular worker's wage. Moreover, they are employed under the contract that they can be laid off at any time whenever the employer so desires. In the past, the "Rinjikō"

increased with the upswing of the business cycle and decreased sharply with the downswing of the business cycle, and as a tendency it is decreasing. However, such a mobility of the "Rinjikō" between the small-medium enterprise and the large enterprise labor markets has never played an equilibrating function of wages in the two labor markets. In addition, strong "enterprise unions" (enterprise-based, not organized along craft or occupational lines) have acted as ramparts between the two labor markets, so in this regard, this possible route for wage equalization is also canceled out.

FIG. 1. WAGE DETERMINATION IN LARGE AND SMALL-MEDIUM ENTERPRISES



In the lower part of Fig. 1, it is shown that the difference in the starting wages between large and small-medium firms is very small, because of the keen competition for new graduates. However, the wage curve as a function of the length of service is much steeper in large firms, while in the labour market for small-medium enterprise, the slope of the wage curve is much more moderate, owing to the pressure of surplus labor and high labor mobility among small-medium enterprises. Therefore, we have a conspicuous differential between the two average wages which are computed respectively as an average of the large enterprise wage curve, on the one hand, and as an average of the small-medium enterprise wage curve, on the other. In this sense, the "life-time commitment" and the "Nenkō-Joretsu" (length of service) wage system have played important roles in explaining the steep interscale wage differential when viewed from the standpoint of Japanese labor market.

In large firms, such systems almost emerged in the Taishō period (1912–1925), which had not been noted in the Meiji period (1868–1911). Kazuo Ōkouchi, one of the famous labor economists in Japan, explains as follows: The labor mobility in the Meiji period was actually realized "through the medium or agency of senior skilled workers or technicians in the

particular firms or regions... And, the firm did not perform any labor management under its own responsibility and planning, and merely manipulated senior ranking bosses or bigshots, making them a puppet of the firm from behind the curtain... Senior ranking bosses pulled out members from other firms or mustered a number of members entrusted by the company to mobilize through the help of their relatives or friends.... Furthermore, it was up to these senior ranking bosses to decide in what method of calculation, in what criterion, and to whom a particular amount of wage bills should be distributed, and these jobs were almost entrusted by the company. In other words, it was this kind of worker-bosses who performed in a very naive way wage management, which at present is conducted by the enterprisers; and the same kind of worker-bosses also carried out the job of discharging employees, once the company decided to do so.[1]

However, from the end of the Taishō period, "big corporations were obliged to rationalize their business management in a scientific way by themselves, and to establish the organs which functioned effectively, such as the labor management section, the personnel section, the wage section, the welfare section, etc.... The rational and scientific method of labor management had to come up to the scene in place of the traditional labor management based on paternalism or the status hierarchy.[2] According to Ōkouchi, the practice of having a long apprenticeship training, given by labor bosses to employees, began to retreat, and in its place, training programs to produce skilled workers and technicians came to the fore in various corporations for graduates from all three levels of school—primary, middle, and high schools. Thus, the problem of how to foster technicians and skilled workers, the shortage of which was intensified by the development of modern enterprises, was coped by the systems of "life-time commitment" and the "length of service" wage payment.

Some raised a somewhat different view to the emergence of the above employment and wage-payment systems. Takafusa Nakamura[3], for instance, laid emphasis on the rise of heavy industry from around World War I. As a result, he argued that, each corporation in heavy industry felt an urgent need for skilled labor, which accelerated the adoption of the "life-time commitment" system together with the wage-payment policy based on the principle of "length of service." Each corporation did this in order to ensure itself a steady supply of skilled labor. Since there was a relative surplus of unskilled labor—typical example being the female workers in the cotton spinning industry—wages for unskilled labor tended to decline during the long recession in the years 1920–1931. During this time, even wholesale prices fell by one half, but the wages for skilled labor showed an extraordinary rigidity due to the adoption of the new systems mentioned above. Consequently, we see a widening tendency of skill differential in wages, and this was reflected not only in the interscale wage differential but also in the wage difference between heavy and light industries. Although Nakamura's speculation seems to be interesting and seems to have some validity, his hypothesis might not be able to explain why the interscale wage differential was enlarged even within light industry (typically, textiles) too.

At any rate, the labor market approach for explaining the emergence of the sharp wage

[1] Kazuo Ōkouchi, ed., *Nihon no Keiei to Rōdō*, I (Management and Labor in Japan), (Tokyo, Yūhikaku, 1961), pp. 12–13.

[2] *Op. cit.*, p. 14.

[3] M. Shinohara and N. Funabashi, ed., *Nihongata Chingin-Kōzō no Kenkyū* (Studies in the Japanese Pattern Wage Structure), (Tokyo, Rōdōhōgaku Kenkyūsho), p. 52.

differential seems to be very effective and important, and we cannot neglect this point here.

Although the following is a digression, it may be of interest here. It concerns the very famous hypothesis of Alexander Gerschenkron[4] that a relatively underdeveloped country could develop rapidly if it could import foreign technology from advanced countries. In this case, the foreign technology inclines to be capital-intensive, so at first sight it does not seem to be profitable for an underdeveloped country to adopt it, because it is more advantageous to have the utilization of cheap labor and the labor-intensive production than to have the capital-intensive production which entails an immense capital cost. However, Gerschenkron noticed a difficulty in forming modern industrial labor which would rather see its relative wages raised. Therefore, he maintains that even if an underdeveloped country is characterized by its surplus labor, the combination of having a relatively high wage system for industrial labor and of having the capital intensive technique introduced as a "big push" will be useful in enhancing the level of an underdeveloped economy and in accelerating the industrialization of such an economy.

Gerschenkron's hypothesis concerning the utilization of imported technology is very persuasive. However, another hypothesis of his concerning the high wage cost for industrial labor does not seem to be applicable to Japanese case. Therefore, Henry Rosovsky[5] put forth his hypothesis. Rosovsky argued, that the labor management of the Japanese pattern pertaining to the "life-time commitment" and the "length of service" wage-payment systems was a very smart device, because it enabled to form modern industrial labor inexpensively. In this respect, we can observe in Rosovsky's viewpoint a peculiarly Japanese-type responsiveness, which is quite different from the formulation made by Gerschenkron.

Rosovsky's evaluation and interpretation stop here. However, if his evaluation, that the "life-time commitment" and the "length of service" wage-payment systems are very low-priced and ingenious devices, is correct, we can further assume that the inexpensive industrial labor is tied up with imported technology through the establishment of such a peculiar pattern of labor management. The combination of inexpensive industrial labor and imported technology of high level has brought about two consequences: 1) It has made it possible to produce relatively inexpensive commodities as compared with other countries and has accelerated the expansion of the export industry, particularly, light industry in the prewar peried. 2) The introduction of imported technology and the capital-intensive production method tended to create the polarization of large and small-medium firms in the domestic economy. Naturally, industrial labor in large enterprises could be brought forth more cheaply than in other underdeveloped countries. However, the productivity and, hence, wage levels in large firms were obliged to be raised far in excess of those in small-medium firms, which necessitated the formation of the dual economy. If this line of explanation is correct, the "life-time commitment" and the "length of service" wage-payment systems have not only enlarged the interscale differential of wages—by carrying in effect the steeper wage curve of large firms than that of small firms—but it has also contributed in some degree towards the combination of high-level technology and low wages, thus, creating the dual structure in manufacturing sector.

Thus, we should now move on to the analysis of another hypothesis in relation to capital market.

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[4] Alexander Gerschenkron, *Economic Backwardness in Historical Perspective*, (Harvard University Press, 1962), Chapter 1.

[5] Henry Rosovsky, *Capital Formation in Japan*, 1868-1940, (Glenco, 1961), Chapter 4.

IV. *Capital Concentration Hypothesis*

If the introduction of capital-intensive technology in less-developed economies has brought about a dualistic or multi-layer differential in wages in the manufacturing sector, then the capital-concentration hypothesis to be discussed here seems to become very important. This is particularly important, when we take into account the fact that the sharp interscale wage differential came about only after World War I—it had not existed before in Japan—and also the fact that we have similarly tilting wage differentials in underdeveloped countries only, probably, in the postwar period, when the injection of foreign aids brought about large enterprises in the domestic economies.

A very simple conception can be held in regard to the capital-concentration hypothesis when we pursue the following line of logic: Steep interscale wage differential may come into effect by the interscale differential of value added per employee (henceforward, it will be termed as "the value added productivity") and the latter will, in turn, depend upon the fact that the capital-intensity (capital-labor ratio) becomes exceedingly higher as we go back and follow it from the small-size up to the large-size establishments. As a simple explanation of production function any textbook of economics tells us, that if the output is a function of capital and labor, then the output per man would be a function of the capital-labor ratio. Therefore, from the interscale differences of productivity, we may infer that the capital-labor ratio is also steeply sloped among scales of establishments. Or the steeply sloped capital-intensity among different-size establishments may be one of the important causes explaining the interscale productivity differential.

The problem is that, if the interscale productivity differential in Japan is far steeply sloped than it is in advanced countries, we may expect that the same relationship will also hold true as regards differences in capital-labor ratio among scales of establishments. If this is correct, we may also guess that the interscale capital-intensity differential which is more steeply tilted, is probably much more dependent upon the allocation of capital, which is mostly concentrated in large establishments. The capital-concentration hypothesis comes up in our minds through such a line of reasoning. It is true that the Japanese interscale value added productivity is more steeply sloped than it is in advanced countries, but an international comparison of capital-labor ratio is difficult, because the statistics on capital is book-valued, and the basis of valuation may differ from country to country. In postwar Japan, it is well known that the revaluation of fixed assets was enforced three times, in 1950, 1951, and 1953, but although large enterprises revalued their assets up to the limit, many of the small-medium enterprises failed either to do so or left their assets undervalued. However, we may safely speculate that capital concentration in relatively larger firms can be expected to be at the top in the following chain of causations: capital concentration→differential in capital intensity→productivity difference→wage differential.

In a country such as Japan, which started late in the arena of industrialization but has attempted to catch up with the level of advanced countries, it would be unavoidable to some extent to have, in one extreme of the economy, a big business sector highly modernized by the introduction of top-level technique of production, and, in another extreme, a vast number of medium and small enterprises which have also expanded, so far, but with considerable lag

and delay. Moreover, since the potential for a high rate of growth in Japan is tremendous, we have always had a situation in which there was an abundance of labor force but a capital shortage. If the big business sector tries to introduce new techniques and raise the level of investment rapidly, it is quite natural that the investment concentrates in one sector of the economy while there arises a capital shortage in other sectors. Consequently the tilting of capital intensity between big business and small-medium enterprises in Japan would be sharper than it would be in other advanced economies. The affiliation of city banks and big business, the priority allocation of state funds to big business, etc., have enhanced this tendency. Such is the background of the capital-concentration hypothesis which helps us in the interpretation of the Japanese dual economy, and the Gerschenkron's hypothesis discussed earlier can be quite interestingly synthesized in our exposition on the historical formation of the dualistic economic structure of Japan even in the manufacturing sector.

The labor-market hypothesis was applied very deftly in the historical explanation of the sharp wage differential—which emerged and was enlarged in the 1920's—and succeeded in explaining why the wage differential widened. How about the historical applicability and validity of the capital-concentration hypothesis? In the 1920's there seemed to have been no positive concentration of capital conjunct with the rapid investment expansion, because the period was just a long, continued process of depression, accompanied time and again by financial crises. Moreover, during this period, a lot of local banks or small financial institutions were bankrupt. The total number of city banks in Japan fell to one-third, from 2069 in 1919 to 663 in 1932, owing to their bankruptcy or amalgamation with larger banks. Since local banks or small financial institutions were, by and large, specialized in financing small-medium enterprises, their bankruptcy meant a terrible blow to the small-medium enterprises. In this sense, on the one hand, the fund directed towards small-medium enterprises was greatly reduced not only in its absolute magnitude but also in its relative proportion. On the other hand, in the 1920's, the amalgamation of industrial corporations began. The rationalization, went, by laying off surplus employment and introducing new equipments, and cartelization of firms proceeded. Since there was a great reduction in loans made by small financial institutions to small-medium firms, funds tended to concentrate to big banks, and this probably contributed much towards accelerating the *relative* concentration of investment in larger enterprises. This is an aspect of the formation of the dual economic structure of the manufacturing sector in the 1920's, from the viewpoint of capital concentration, which accounts in some degree for the widening of wage differential in this period.

The term dual economy means: the coexistence of modern large enterprises, which are equipped with high-level techniques, and smaller enterprises, including handicrafts, little business, small and medium size enterprises. The latter are a mixture of a variety of firms—the traditional and the less modernized, the small and the medium, those "to be disorganized" and those "to be developed into larger size," etc. The problem is that if the big-enterprise sector still occupies a very small share in the national economy as a whole, then the term, "dual economy," may not be adequate. However, once the big-enterprise sector comes to share a considerably high proportion, we see the establishment of two extremes, the big and small enterprises, and their polarization. In this case, since each of both sectors occupies a high proportion, the word "dual" economy will be worth while using in its true sense. In an economy which is dominated by the small enterprise sector and in which the big enterprises constitute only a small island in the ocean, so to say, the use of the word "dual economy"

may not be permitted. The Japanese economy, which is at present polarized to the two extremes, each proportion being very high, belongs to the very few of such economies worthy of the title, "dual economy." If the big-and-small enterprise sectors are polarized, we may naturally have intermediate-size firms, which are distributed continually between the biggest and the smallest firms. One may call this the "differential employment structure," as Professor K. Ohkawa did,[6] or the "multilayer structure," but we shall use the term "dual structure" here, since this particular concept is always used as the ideal type, and the word "dual economy" is useful in accentuating the polarization of the two extremes each of which has a high proportion.

We have Table 8 as an illustration of wages, productivity, capital intensity, etc., classified by the size of firms. This is based on the detailed statistics of the small-medium enterprises which were surveyed in 1957, on the firm-basis (not the establishment-basis); the *Comprehensive Basic Survey of the Small-Medium Enterprises*, 1957 (Small-Medium Enterprises Agency).

TABLE 8. CAPITAL INTENSITY, CAPITAL COEFFICIENT, SHARE OF WAGES AND SALARIES IN VALUE ADDED BY SIZE OF MANUFACTURING FIRMS

—1957—

Size of firms (employees)	Number of firms	Value added per man	Capital intensity	Capital-value added ratio	Wages per man	Wages and salaries / value added
		1,000 yen	1,000 yen		1,000 yen	%
1-9	300,374	186	69	0.371	114	34.6
10-29	77,644	289	78	0.270	136	44.5
30-49	13,332	348	91	0.261	146	42.1
50-99	8,460	420	120	0.285	157	38.1
100-199	3,146	492	166	0.337	172	35.7
200-299	981	564	209	0.371	187	33.6
300-499	645	696	309	0.445	205	29.9
500-999	441	780	408	0.523	230	29.6
1,000-1,999	222	922	589	0.639	259	28.7
2,000-4,999	135	1,078	687	0.669	301	28.3
5,000-9,999	46	866	558	0.729	287	37.8
10,000 and over	28	897	651	0.727	329	37.1
Total	405,424	516	289	0.560	194	34.4

Source: Recompiled from the original data of the *Chūshō-kigyō Sōgō Kihon-Chōsa* (Comprehensive Basic Survey of Small-Medium Enterprises), 1957. Quoted from Economic Planning Agency, Economic Research Institute, *Shihonkōzō to Kigyō-kan Kakusa* (Capital Structure and Interfirm Differential), Tokyo, Ministry of Finance, Printing Office, Study Series 6, 1960, p. 71. Incidentally, Kenichi Miyazawa headed the project of completing this book.

The valuation of assets was standardized in terms of the valuation used for tax purposes. This is not a book-value, and also, not a replacement cost. However, it shows, in a satisfactory way, the rising tendency of capital intensity and capital coefficient, as the scale of firms increases, and the wage differential which is positively correlated with the capital intensity. The following numerical relationships were obtained:

[6] Kazushi Ohkawa, "The Differential Employment Structure in Japan," *Annals of the Hitotsubashi Academy*, April, 1959.

$$O/L=746.8 \log K/L-1{,}150, \qquad R=0.987,$$
$$W/L=0.2885\ K/L+115, \qquad R=0.976,$$

O/L denotes the valued-added per man, W/L the wages and salaries per man, and K/L the capital per man (capital intensity).

A similar result regarding prewar manufacturing and commerce was obtained by Mataji Umemura.[7] Utilizing the *Kōgyō Chōsa-hyō* (Survey of Manufactures) of Tokyo city, Yokohama city, Nagoya city, Kobe city, Osaka city, and Osaka prefecture in 1932, he made clear the sharp differentials which have been existing in the wages, the value added per man, the capital intensity, and the capital coefficient. In view of the fact that in 1909 and 1914 we saw no such clear interscale differential in productivity and wages, the downward-sloping curve of capital intensity seems to have been intensified in the 1920's.

V. *Hypothesis in Relation to the Product Market*

Since we have explained the roles of the labor and capital markets in the formation of the strikingly sloping wage differential, we have to move on to discuss another important factor of the wage differential, the product market. Actually, we would like to take up in this section the following two problems which are related to each other. 1) The prices of commodities produced by large enterprises are apt to be relatively more rigid than those produced by small enterprises. In general, this is due to the fact that oligopoly prices have a higher rigidity whil competitive prices are more flexible. In the long price-fall process in the 1920's the prices of commodities produced by small enterprises were much more downward-flexible than those produced by large enterprises, and the price dispersion between them could be expected to have increased. This widening price dispersion would naturally have been absorbed in the increasing wage differential between large and small firms. Of course, we do not have enough statistical data to explain the changes in the price relationship, classified by large and small enterprises in this period, but in such a long continued depression, in which the wholesale prices fell 50% for ten years, we may expect the occurrence of the widening price dispersion and the consequent aggravation of the wage differential. 2) The second problem is closely related to the first. From postwar experiences, we may easily infer that in recessions the processing fee for the subcontracting of small-medium enterprises always tends to decline very sharply, e.g., the processing fee for fountain pens dropped to almost one-half in 1957–58, and the processing fee in acetate and nylon wearing plants, which were subcontracted to a big textile corporation, declined almost to one-third its earlier fee in January, 1957–April, 1958, as is indicated in Tables 9 and 10. Since we had such events even in the postwar period, we may be safe in assuming that it prevailed also in the prewar period, particularly in the 1920's.

The so-called "small-medium industry problem" came to the fore in the 1920's for two reasons. First, in the Meiji period, people were only conscious of the confrontation of large enterprises implanted from abroad with small enterprises which were mostly of indigenous character, but in the Taishō period and thereafter not only small enterprises but also medium-size enterprises which had evolved from small enterprises became objectives of exploitation by

[7] Mataji Umemura, *Chingin Koyō-Nōgyō*, (Wages, Employment and Agriculture), (Tokyo, Taimeidō, 1961), p. 209.

TABLE 9. EXAMPLES OF THE DECLINING PROCESSING FEES IN WEAVING SUBCONTRACTORS

		Processing fees of weaving	Price of thread	Price of woven fabrics
Acetate	1957, Jan. 1	2,000 yen	5,000 yen	7,000 yen
woven fabrics	1957, July 1	1,200	4,500	5,700
(50 yards, 1 unit)	1958, April 1	700	4,500	5,200
Nylon	1957, Jan. 1	3,000	5,000	8,000
woven fabrics	1957, July 1	1,500	4,500	6,000
(50 yards, 1 unit)	1958, April 1	1,000	4,500	5,500

Note: This is an example of a small weaving factory with about 50 employees in Fukui Prefecture under the subcontract of a big enterprise, which was surveyed by the writer himself. Quoted from M. Shinohara, ed., *Sangyō Kōzō* (Industrial Structure), (Tokyo, Shunjūsha, 1959), p. 113.

TABLE 10. TWO EXAMPLES OF PROCESSING FEES FOR FOUNTAIN PENS FOR EXPORTS AND MUFFLERS

A. Fountain pens for exports			B. Processing fees for mufflers		
	1957	1958		Ordinary mufflers	Figured mufflers
Cost of parts	255 yen	155 yen	1949	35 yen	55 yen
Processing fees	125	65	1951	18	23
Appurtenances and overhead costs	145	115	1952	16	20
			1955	14	17
Total	525	295	1958	12	15
Around Osaka			Kiryū district		

Sources: A. *Chūshō-kigyō Chōsakai* (Japan Small Business Research Institute), *Chūshō-kigyō Kenkyū* (Studies of Small-Medium Enterprises), Vol. IV, *Yushutsu Chūshō-kigyō no Keizaikōzō* (Economic Structure of Small-Medium Export Industries) (Tokyo, Oriental Economist, 1962), p. 161.
B. M. Kajinishi, H. Iwao, Y. Kobayashi and T. Itō, ed., *Kōza Chūshō-kigyō* (Courses: Small-Medium Enterprises), Vol. II, *Dokusen Shihon to Chūshō-kigyō* (Monopoly Capital and Small-Medium Enterprises), (Tokyo, Yūhikaku, 1960), p. 190.

large enterprises through the development of subcontracting. Thus, in the Taishō period, the new concept of the "small-medium" industry emerged, as different from the "small industry" of the Meiji period.

Since the core of the so-called "small-medium industry problem" was the exploitation by large corporations through the subcontracting system which became an object of heated discussion just in the midst of the 1920's we may guess how conspicuous the exploitation of large corporations was in this period. We have a lot of economists devoting themselves to a study of small-medium industry in Japan, but almost all of them assume that the exploitation was the core of the small-medium industry problem.

Such being the case, the behavior of the product market, particularly its price dispersion can be assumed to have played a great role in enlarging the interscale wage differential from the end of World War I to the Great Depression of the 1930's.

Thus, the labor economists were mostly interested in the institutional peculiarity of labor market, and the small-business economists, by and large, paid great attention to the factor of exploitation through the subcontracting system. Both aspects are true, and cannot be neglected in understanding the formation of Japan's extraordinary wage differential, as compared with advanced countries, but we have raised here an additive complementary hypothesis on the capital concentration to larger firms. It is our assertion that the three pillars—the labor market, the product market, and the capital market—are all indispensable in the full understanding of the dualistic aspect of the Japanese economy. However, we are tempted to lay a slightly greater emphasis on the hypothesis of capital concentration, because without this we cannot have in mind the polarization of the large and the small enterprise sectors, each with predominant proportion in the national economy as a whole. And, without relying on this hypothesis, we may not be able to see how the dualistic structure had to come about as an inevitable consequence of the catching-up process of a rapidly developing economy.

VI. *Criticism and Rejoinders*

Our analysis has merits in that it is realistic and comprehensive but from a theoretical viewpoint it is subject to a few criticisms.

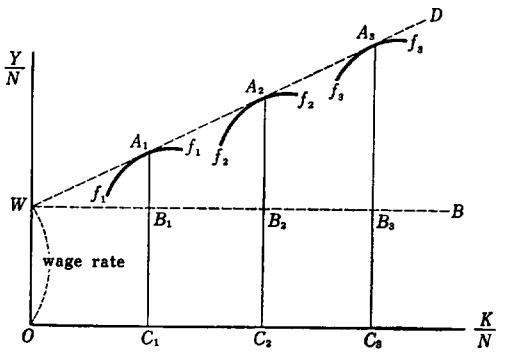
Although in our capital-concentration hypothesis the logic of causation starts from capital concentration to larger firms, and the establishment of the sloping capital intensity by size of firms through the value added productivity differential down to the wage differential, a person with a textbook knowledge in the micro-economics may raise a fundamental doubt with respect to such a reasoning. What is decided or given in the market first is the wage rate, interest rate and prices of products, aud after that the entrepreneur is supposed to try to maximize his profit by choosing the best combination of capital and labor. Therefore, in the static theory, the direction of causation does not begin from capital concentration or tilting of capital-labor ratios among different size firms, but it is completely reversed. If this is correct, one may be naturally skeptical about our hypothesis.

If we assume that the entrepreneur will behave perfectly in a passive way to a set of commodity and factor prices determined in the markets, this doubt is absolutely right. However, the question is whether or not the actual entrepreneur behaves along the textbook formulation described in a very static way. Although in the price theory, it is often assumed that the choice of technique or the combination of factors of production is dependent, passively, upon the relative prices of factors *at a point of time*, actually the purchased machinery or structures will continue to be employed over a period of time, *e.g.*, ten or fifteen years. Consequently, what should be taken into account is not the present factor-price structure, but the present as well as the future rates of interest and the expected real average wage rates for the coming, say, fifteen years. In such a dynamic economy as Japan, the real wage rate can be easily doubled during the same period. We do not deny the validity of the static theory within the confines of many assumptions and regard it as a good exercise of economic logic and also as a useful pedagogic device. However, in the actual world, the entrepreneur must choose a set of techniques, taking into consideration, of course, the real wage rate expected to prevail fifteen years hence. In this sense, the prevalent empirical derivations of the so-called CES production function, which is essentially based upon the static assumptions of

profit maximization, seem very often neglectful of the gap existing between the static theory and the dynamic real world. The CES function is perfectly outside our present discussion, but if one sets up an empirical function that the output per man is a linear function of the real wage rate at the present time, this also involves the same misapplication of the static tools of analysis to the real world. The fixed investment of large enterprises in a highly dynamic economy makes due allowances for the future increase in real wages, the expansion of domestic and foreign markets, and the strategy for enlarging their market shares. Therefore, the usual assumption of the passive choice of technique, dependent on the present prices, wage rate, and interest rate is in reverse order of the actual causation. In the dynamic world, the entrepreneur is inclined towards introducing top-level technology or equipment, sometimes disregarding the present factor prices. In this sense, he would even try to introduce the first-class technology, if he has adequate provision of funds. Top-level technique is, first, given from outside. Once this is given, it is beyond doubt that the capital intensity in large enterprises will indicate a marked difference as compared with that in smaller enterprises.

The second criticism was raised by Mitsuhaya Itō.[8] Let us summarize the essence of his argument.

FIG. 2. PRODUCTION FUNCTION AND WAGES



Let us assume that the production functions for three industries (treating them as if they were integrated in one firm respectively) are of shapes (f_1f_1, f_2f_2, and f_3f_3) as indicated in Fig. 2. In this case, the production function is designated by the following formula

$$Y/N=f(K/N)$$

where Y/N (the value added per man) is a function of K/N (the capital-labor ratio or the capital intensity). Each industry will try to choose a technique or capital intensity which will yield the maximum rate of profit, by the adaptation to the wage rate wO given in common to each industry. The chosen points, A_1, A_2, and A_3, are given by the tangent points between the curves ff's of the production functions and the given straight line wD drawn from the point of the wage rate w; therefore, OC_1, OC_2, and OC_3, are the selected capital intensities for the three industries. For instance, in the industry 1, the capital intensity OC_1 is employed, but, since the wage rate is B_1C_1 and the value added per man is A_1C_1, A_1B_1

[8] Mitsuhaya Itō, "Nijūkōzō-ron no Tembō to Hansei" (Review and Retrospection of Theories of the Dual Structure), in Kawaguchi, Shinohara, Nagasu, Miyazawa and Itō, *Nihon Keizai no Kisokōzō* (Underlying Structure of the Japanese Economy), Symposium, (Tokyo, Shunjūsha, 1962).

stands for the profit per man. If the profit per man (A_1B_1) is divided by the capital per man (wB_1), we have the profit rate which is represented in Fig. 2 by the slope of wA_1 itself.

However, in Fig. 1, the wage rates as well as the profit rates are equalized among the three industries. In other words, the wage rate wO is common to each of the three industries, and wD is tangential to any of the production functions, f_1f_1, f_2f_2, and f_3f_3. Nevertheless, there are considerable differences in the capital intensity, and $OC_1<OC_2<OC_3$ prevails. We see differences among different-size firms not only in the capital intensity, but also in the value added per man. Moreover, despite the marked difference in the value added productivity (A_1C_1, A_2C_2 and A_3C_3), we see that this difference is not reflected in the wage differential. This prevails even under the assumption of the equalized profit rate among industries. Itō presumes that this model can be a decisive material as a criticism for the capital-concentration hypothesis, for even if the sharp interscale differential emerges in the capital intensity and productivity through capital concentration to big business, the above model illustrates that it will not necessarily be reflected in the wage differential. Furthermore, this relation holds true even as an equilibrium point.

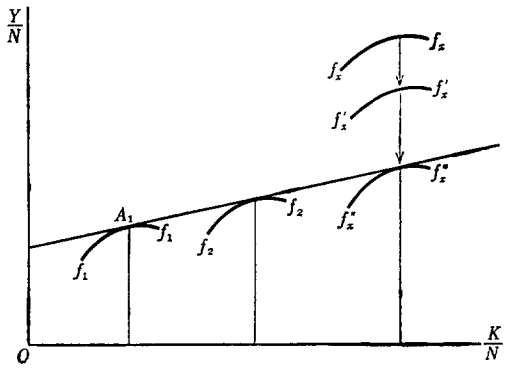
His second point of criticism is as follows. Although productivity has been measured so far in terms of value added, what we are concerned with is the physical productivity, because the production function denotes essentially a technological relationship. Let us assume that in the x industry technological progress occurs and the production function is shifted to f_xf_x, as indicated in Fig. 3. In this case, the industry may have a higher profit rate and wage rate owing to its higher productivity. However, the price of x commodity may fall just in an inverse proportion with the rise of the physical productivity in the competitive economy, so as to bring about a situation in which the wage rate as well as the profit rate are equalized among industries. If such a classical price adjustment works, a temporary rise in the physical productivity due to an increase in the capital intensity in the x industry will be eventually removed by price decline of equal magnitude. In other words, its value-added per man will be lowered, until the profit rates are equalized among industries. If f_xf_x fell to $f_x''f_x''$, then we have an identical chart as Fig. 2.

Itō, therefore, lays great stress on the role of the product market, because his theoretical model seems to demonstrate very cogently that the oligopolistic price rigidity which prevents the full working of the classical price adjustment plays an indispensable role in widening the wage differential very abnormally. If we neglect the oligopolistic factor in the product market, the causal chain of the interscale differentials in capital intensity, physical productivity, and wage rate cannot help but be cut off midway, and the capital-concentration hypothesis will cease to operate.

Itō's criticism of laying greater stress on the role of oligopolistic pricing in the dual economy does not stop here and goes into few other points. However, since the above two seem to be most important, we shall not take up the rest of his criticisms here. His important contribution lies in pointing out that the relation between physical-productivity difference and wage differential is not as directly connected as it appears to be, and his assertion was that the role of the product market is more important than those of the capital and labor markets.

We are now in a position to answer each of his criticisms. We will start from his second criticism. Itō emphasizes the role of the big firms' oligopolistic pricing and the price rigidity. However, even when the physical-productivity differential is passed on completely to the value-added productivity differential through price rigidity, it does not necessarily happen

FIG. 3. PRODUCTIVITY, PRICES AND PRODUCTION FUNCTIONS



that the latter will automatically induce a spread also of the wage differential. Just in the same way as Itō stresses in the product market, if perfect competition and high labor mobility prevail in the labor market, the wage rates will be equalized among industries, notwithstanding the existence of oligopolistic pricing in the product market. This is the reason why Naomichi Funabashi,[9] insisted that what is really responsible for the wage differential by size of firms is the imperfection of the labor market, and neither the capital concentration nor the oligopolistic pricing by big corporations is responsible for this. Itō, however, exaggerates the importance of the oligopolistic pricing, anticipating, although unconsciously, the unconditional transmission of the value added per man difference to the wage differential. However, it is logically feasible that there is no wage differential despite the tilting differential of value-added productivity caused by the inflexible oligopolistic prices. In such a case of competitive labor market, even Itō's point loses its sense.

Consequently, even when competitive equilibrium prices are assumed to be established in the product market, the widening gap in the physical-productivity differential will not be a sufficient condition for the prevalence of the wage differential. And, once the perfect competition and high labor mobility are assumed in the labor market, however large the value-added productivity differential might be, it cannot be transmitted down to the wage differential. However, only if we assume the imperfection of the product market as well as labor market, the sharp differential in the physical productivity can be reflected in the wage differential. If this point is stressed too much as Itō does, the labor economists would say that they are also entitled to emphasize, in a strategic and independent way, the imperfection of labor market. Labor economists would maintain that what is only relevant is an imperfection in the labor market. But this point, when emphasized, will be damaging to Itō's hypothesis mentioned above.

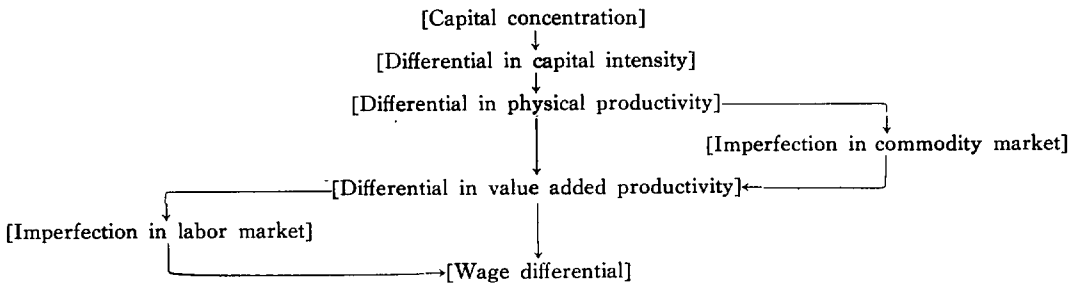
However, we are not going to dodge the main question by changing the subject. What was made clear was that if we become overly worried about the perfection or imperfection of the individual market, the broad comprehensive analysis of the dual structure from a nation-wide angle will retreat to the background, and instead a partial or "truncated way" approach

[9] M. Shinohara and N. Funabashi, ed., *Nihongata Chingin-kōzō no Kenkyū* (Studies in the Japanese Pattern Wage Structure), (Tokyo, Rōdōhōgaku Kenkyūsho), pp. 47-51.

will again come to the fore. As Professor Tokutarō Yamanaka has once pointed out in relation to the studies of small-medium industry in Japan, we should not be biased toward an overly "truncated way" of approach. To go back to it is nothing but a retreat to a poor, partial analysis.

If so, can we find a proper way to prevent any retreat toward a partial analysis, and at the same time still maintain an exact formal logic? Probably, when Itō gives prominence to the coexistence of oligopolistic and competitive prices in the product market, he might or should anticipate the existence of some imperfection in the labor market. And only when this idea is postulated can we say that the enlarged physical-productivity differential is reflected upon the greater wage differential. In a smiliar way, if the imperfection in the product market can be assumed to be given, as it is in the real world, the capital concentration in bigger corporations and the consequent extension of capital-intensity differential will be able to be embodied in the enlarged interscale difference in the value added per man. Consequently,

FIG. 4. CAPITAL CONCENTRATION AND INTERSCALE WAGE DIFFERENTIAL



if we can assume, as given, both the imperfection of the product and labor markets at a level which prevails in the actual world, then we can easily say that the more the capital is concentrated in bigger firms, the more the wage differential will be enlarged as a necessary consequence of a causal process set forth already. The partial, static analysis seems to be correct at first sight, but it may run a risk of being involved in a narrow "truncated way" approach, in spite of the fact that the problem of the dual economy is essentially of a nation-wide, structural nature. Once the imperfection of the product and labor markets are assumed as given, the polarization of investment will have a strong influence upon the widening wage structure. If we assume that the degree of imperfection of the product and labor markets is the same in countries A and B, then A's wage differential will be more steeply sloped than B's, when investment is much more concentrated in bigger enterprises in A than it is in B.

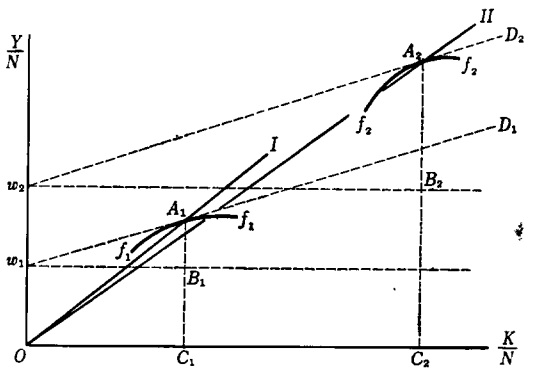
If we stick to the static, partial approach which limits our scope of observation to a particular market and which only presumes entrepreneurial behaviors of a very passive nature, we may not be able to grasp their highly dynamic activities and the consequential divergence of productivities and wages between the larger and the smaller enterprise sectors. Actually, their activities are never adaptations to the existing interest rate, wage rates, and commodity prices.

We shall now move on to Itō's first criticism, in which he has theoretically pointed out that some perennial differences in the capital intensity and the value-added productivity among different-size firms can coexist with the profit rate and the wage rate both of which are perfectly equalized among different firms. From such a theorizing, he went on to say that

the capital-intensity differential and the consequent value-added productivity differential due to capital concentration will not necessarily bring about the differential in wage rates.

Insofar as we discuss this problem within his theoretical framework, he is absolutely correct. However, we can set up another model in which the capital-intensity and the value-added-per-man differentials differ among different-size fiams, having, however, the profit rate equalized, and the wage rate higher in the firm of higher capital intensity and productivity. Fig. 4 illustrates this case.

FIG. 5. AN ALTERNATIVE CASE WITH WAGE DIFFERENTIAL



In Fig. 5, the profit rate is the same in industry 1 and 2, because w_1D_1 and w_2D_2 are mutually parallel, and $\frac{A_1B_1}{w_1B_1}$ and $\frac{A_2B_2}{w_2B_2}$ are equal. However, since $OC_2 > OC_1$, the capital intensity in industry 2 is higher. Since $A_2C_2 > A_1C_1$, the value added per man is also higher in industry 2. The capital-output ratio is measured by $\frac{K}{N} \Big/ \frac{Y}{N}$, so the steeper slope of I than II means a lower capital-output ratio. In this sense, industry 2 has a higher capital-output ratio. The wage rate is higher in industry 2, for w_2O is higher than w_1O. In this model, we need not worry about a possibility that a higher capital intensity will not entail a higher wage rate. Therefore, Itō seems to point out only one possibility and does not give any proof that in equilibrium a higher capital intensity will always coexist with the same wage rate as in other industries which have a lower capital intensity. We may formally prefer either Fig. 2 or Fig. 5. However, we cannot but imagine that the case of Fig. 5 is much closer to the reality.

Returning again to Itō's second criticism, we have to make further additions. If Itō presumes that, in order to do away with an abnormal wage differential, a sufficient decline in the relative prices of the commodities must occur in the industry in which the comparative physical productivity manifested a marked increase, something very unrealistic seems to be implied in the policy recommendation stemming from his hypothesis. He seems to have set up unconsciously a reference criterion that a relative price decline in an inverse direction with the relative physical-productivity increase is required in order to evade the occurrence of the sharp wage differential, or that if the sharp wage differential already prevails, an important remedy for it would be to have a relative price decline in the oligopolistic industry, which is

large enough to eliminate the wage differential. However, this criterion is valid only in a closed system. Actually, in an open economy, the price decline cannot be so exorbitant as compared with the prices in advanced industrial countries. Therefore, if we take into account the international price relationship, there would be limit in the relative price decline which will eliminate the wage differential. In other words, Itō's point seems to put too much weight upon a factor which is rather commonly found in most countries and which does not vary greatly from country to country. It would not be smart thing to introduce such a factor common to most countries in order to explain a unique phenomenon, like the wage differential in Japan. If the relative price decline is set up as a policy for eliminating the wage differential this is expecting too much, and it is a rather unrealistic policy.

VII. *Agriculture and Labor Market*

As long as the topic we are concerned with is dual economy, we should not miss the problem of agriculture, because Japanese agriculture has long been assumed as a pool of disguised unemployment and a basis of "cheap labor" in general. If so, its analysis is indispensable to the understanding of the dual economy in Japan. Although we have so far discussed the problem of dual economy, it is very evident that a dual economy will not exist in a labor-shortage situation. Japan is now in transition from the labor-surplus to the labor-shortage situation which means Japan is undergoing a fundamental change in her basic structure. In this sense, the question as to whether or not the economy is in the stage of surplus labor becomes a crucial factor for the persistence of the dual structure.

In the process of economic growth, agriculture seems to have played a great role. In such a country, like the United Kingdom, where the proportion of agriculture is extremely reduced, agriculture cannot supply enough labor with relatively low wages for the demand from manufacturing and service industries. Sometimes, this becomes one of the bottlenecks to her economic growth. However, in the economies, endowed with surplus labor, high growth rate is sometimes realized if it has a sufficient propensity to invest and introduce innovation.

In Japan, the word agriculture has long been accepted as if it is an "exploited," and "sacrificed" industry. Of course, it is a relatively declining industry in the sense that its proportion in terms of labor force or output is decreasing, but it has also been recognized as the "sacrificed" industry in the sense that its relative income has long been suppressed and the cheap labor coming forth from agriculture has played an important role in the development of the non-agricultural sectors. It is only due to their low wages that the high growth rate in the manufacturing sector was thought to have become feasible through its high rate of capital accumulation. In this sense, Japan's agriculture has had the characteristics of being exploited by, sacrificed for, and instrumental to the development of the non-agricultural sectors. Whether or not this is true can be a subject of a heated debate, but what is important is to have in mind that such an idea was held by many, even by non-Marxian economists, as a typical Japanese notion of agriculture, although to a foreigner who is accustomed to the high efficiency of big-scale farming, such a view may appear strange.

At any rate, the proportion of the net supply of labor force from agriculture in the total increase of employment in the non-agricultural sectors in the Meiji and Taishō periods was

extremely high. According to the estimate of Mataji Umemura,[10] the ratio was 91.8% in 1875–80, 81.7% in 1895–1900, and 72.5% in 1910–1915. This indicates that agriculture played a very important role as a source of labor supply to the non-agricultural sectors, insofar as the Meiji and Taishō periods are concerned. His estimate has also made clear that the ratio was still 53.4% in 1930–1935. We are not sure about the postwar figure. Since the increase in the labor force employed in the non-agricultural sectors for 1955–1960 was 5.66 million, while the decline in agriculture (including forestry and fishery) was 1.77 million, the ratio of the latter to the former was 31%. However, even when the employed labor force in agriculture does not decrease, the outflow of labor force will still exist. If we can estimate this portion, the proportion of labor supply from the agricultural sector can be expected to be very high even in the postwar period.

In this sense, the labor market in the non-agricultural sectors has been strongly supported by the labor migration from farm villages. Recently, we see an increasing number or proportion of side-work farmers and commuters from farm households. Such a high dependency of the labor market upon agriculture cannot be ignored in the analysis of Japan's labor market and particularly in the construction of some hypotheses or theories in relation to it. In this sense, we shall take up the famous "Dekasegi-gata Chinrōdō-ron" (a thesis of the household-supplementing type labor migration), presented by Professor Kazuo Ōkouchi.[11]

Ōkouchi suggested that as petty peasants who had been under serfdom, so to say, in the feudal age were thrown into the exchange economy since the Meiji Restoration, they could not but send out household members as factory or mine workers in order to supplement the fall in their farm incomes. If wage labor in Japan was essentially of the "household-supplementing type," then the wages paid to them would, by its very nature, be very low. In the prewar period, the proportion of labor of the textile industry was predominantly large and its female composition of labor, very high. So we can generally presume that the female workers supplied from rural districts were typically of the "household-supplementing type" receiving low wages. This was due to the fact that the supply price for their labor was very low, for the incomes they earned did not have to cover all expenses of farm households and were only supplementary. He did not restrict the concept of the "household-supplementing type" labor only to female labor in the textile industry. Although female labor was dominant in the prewar period, the huge exodus of second and third sons to non-agricultural sectors in conjunction with the development of heavy industries from the 1910's to the 1930's is also included in his concept. Moreover, from 1937—when the Sino-Japanese Incident occurred—to the present, we had a lot of "semi-farm and semi-manufacturing worker" type farm households, which did not go through the process of emigration. All these are recognized by Ōkouchi as those elements which constitute the "household-supplementing type" labor, the character of which is, according to him, peculiar to the Japanese economy.

Ōkouchi goes on to discuss that, in a period of depression, the workers return to the farm and in prosperity they go out for work in the factories. Therefore, the farm villages were, so to say, a pool of the disguised unemployment which swelled during depressions and decreased during prosperity. His theory assumes the persistent existence of the reserve army

[10] Mataji Umemura, "Meiji-nenkan niokeru Jisshitsu Chingin to Rōdō no Kenkyū" (Real Wages and Labor Supply in the Meiji Period), *Shakaikeizaishigaku*, April, 1961.

[11] *E.g.*, Kazuo Ōkouchi, "Nihonteki Rōshikankei no Tokushitsu to sono Hensen," (Peculiarities of the Japanese Employer-Employee Relation and Its Changes), *Nihon Rōdō Kyōkai Zaishi*, April, 1959.

in farm villages, and ignores a possibility that an exodus of farm labor might result in the disintegration of farm villages. In this sense, his theory is in line with the so-called "Kōzaha" Marxian thinking. In other words, the relics of semi-seigniorial relations in rural viilages and government regulations for maintaining the pre-capitalistic landownership prevented the complete disintegration of the peasant. Consequently, in Ōkouchi's theoretical framework, he could not but set up a kind of relief valve, the "household-supplementing type" labor, which goes out to other industries during prosperous periods and returns during periods of depression, whereby the rigidity of the institutional structure of villages is maintained and a complete exodus of the farm peasants is prevented. This way of thinking was confronted by another stream of Japanese Marxists, the so-called "Rōnōha," which has viewed the disintegration of the peasants and their exodus from their farms as necessary consequences of the permeation of the money economy.

Ōkouchi's thesis is very prominent at least as an expository hypothesis of the prewar Japanese labor market. It is true that the Japanese economy has gradually become heavy industry-oriented, which is why the proportion of the "household-supplementing type" labor, the core of which was the female labor in textile industry, has become gradually reduced as well. However, Ōkouchi's thesis has presented the typical Japanese notion of agriculture and the clear-cut and distinct ideal type of the relationship between the rural village and the labor market in a very interesting and excellent way. Masakichi Namiki[12] raised a point of criticism against Ōkouchi's hypothesis and indicated empirically that there was no cyclical movement in the net supply of labor from agriculture and that the net labor supply from agriculture was relatively constant regardless of the booms and slumps of the business cycle. This entailed some debates between him, and Ryōshin Minami=Akira Ono.[13] But, leaving aside the cyclical variation, it cannot be denied that the prewar farm village had been a constant source of plentiful labor supply needed by the manufacturing industry, etc.

Even in the postwar period, the same phenomenon held true to some extent. In this connection, the *Report on the Survey of the Tokyo-Yokohama Industrial District*, based on a survey conducted in 1951–52 by Kanagawa Prefecture under the guidance of Ōkouchi, Ujihara, etc., is to be noted. From this survey, various interesting conclusions emerge, but we will restrict ourselves to an exposition of only a few points: 1) The proportion of male laborers whose parents' occupation was agriculture was 43.3% in the factories with 5–29 employees, 36.4% in those with 30–99 employees, 38.5% in those with 100–499 employees, and 48.2% in those with 500 employees and over. 2) The summary result of the occupational experiences of male labors in this district indicates that about half of them had no experience of working in fields other than factories, and a majority of another half had engaged agriculture. 3) Among factory laborers, there were many from the "semi-farm and semi-manufacturing worker" type households, who had not abandoned agriculture, but who commuted from such households to the factory. 4) Quite a few of the laborers of farm origin still continued to have economic relations with their parents' farm households. 5) Once urban workers were dismissed, retired or taken ill, many of them returned to their parents' farm households.

Another comprehensive survey was conducted in March, 1953, by Ōkouchi, Ujihara, etc., on the factors governing admission to higher schools and employment opportunities open for

[12] See footnote (15).

[13] See footnote (17).

new graduates from middle schools in Kanagawa Prefecture.[14] This covered big and medium, commercial and industrial cities and their adjacent rural villages. According to this survey, middle school graduates prefer to go to the manufacturing industry, particularly to big factories. Since the demand for labor in big factories is mainly satisfied by the new graduates in the same districts, the local labor force which flows into the Tokyo-Yokohama district is necessarily absorbed by small factories. In this district, wages at the outset, are relatively high, and their coefficient of variation among factories is low, reflecting the acute demand for labor in the same area. Therefore, laborers of farm origin in local areas cannot but be observed into the lowest stratum in any occupation.

Thus, even after the proportion of heavy industry had risen, there still existed a close relation between the rural districts and non-agricultural development with respect to the source of the latter's labor force. However, it may be naturally expected that the role of agriculture in supplying labor would have diminished in a long course of time, particularly during 1955–60 when the extraordinarily rapid economic expansion occurred. The proportion of laborers whose parents belong to agriculture is probably still high, but if we restrict laborers from agriculture to only those who changed their occupations, excluding new graduates, etc., then the proportion would not be so high, as indicated in Table 11. There would be only very few who would have returned to the village in a depression in the postwar period. Rather, it is plausible that they would more likely have changed their jobs from one small factory to another small factory or to small commercial stores when they were dismissed, in view of the higher rates of accession to and separation from jobs in lower-size establishments. Therefore, it seems to be important to analyze whether or not the new net migration of labor from agriculture has shown a higher amplitude than that from, say, the service industry. If the service industry played a higher role as a cushion for absorbing unemployment than did agriculture, then the Ōkouchi hypothesis of the "household-supplementing type" wage labor should be modified to that extent. However, we lack such an analysis so far.

TABLE 11. THE PROPORTION OF LABORERS WHOSE PREVIOUS OCCUPATION WAS AGRICULTURE

—in relation to the already employed—

	Total	Male
1956	8.7%	11.6%
1957	8.2	10.7
1958	5.1	7.0
1959	6.4	8.2
1960	6.7	8.6
1961	7.6	9.7
1962	7.1	8.5
1963	6.8	8.1
1964	3.8	—

Source: Ministry of Labor, *Rōdō Idō Chōsa* (Survey of Occupational Changes of Laborers).

[14] K. Ōkouchi and S. Ujihara, *Rōdōshijō no Kenkyū* (Analysis of the Labor Market), (Tokyo, Tokyo University Press), 1955.

Although Table 11 indicates the proportion of the "already-employed" (this excludes new graduates) whose previous occupation was agriculture, another statistical source, the Ministry of Education's, *The Basic Survey of Schools*, makes clear the proportion of the new graduates (middle and high schools) who remained and worked in agriculture, as indicated in Table 12. This ratio was 48.5% as concerns the middle school graduates in 1952, but it decreased to 7.4% in 1965. The same ratio for high school graduates declined from 21.3% to 3.6% in the same period.

The concept of the so called "Hojūritsu" (the replenishment ratio) for the male occupancy in agriculture was initiated and computed by Masakichi Namiki.[15] Mataji Umemura, however, computed the same by making use of the aforementioned Ministry of Education's data (Namiki's data are different) under the assumption that thirty years constitute one generation.[16]

TABLE 12. NEW GRADUATES AND AGRICULTURE

	Employer of new graduates from middle schools			Employer of new graduates from high schools		
	Total	Agriculture and fishery	Manufacturing	Total	Agriculture and fishery	Manufacturing
	thousand			toousand		
1952	798	48.5%	28.2%	281	21.3%	15.3%
1953	729	36.1	38.1	288	15.5	17.2
1954	613	33.1	41.0	330	15.4	18.6
1955	693	31.9	37.8	341	18.1	21.0
1956	797	26.6	43.3	390	15.9	23.5
1957	865	21.9	50.1	427	12.5	23.7
1958	775	20.0	47.1	447	11.0	24.9
1959	786	17.0	50.4	496	10.1	25.0
1960	684	13.7	59.6	573	8.0	23.8
1961	501	9.9	65.5	612	5.9	23.1
1962	652	9.7	64.4	649	4.6	22.7
1963	764	9.8	60.5	626	4.6	25.1
1964	698	8.4	61.7	557	3.7	36.2
1965	625	7.4	61.9	700	3.6	36.4

Source: Ministry of Education, *Gakkō-Kihon-chōsa* (The Basic Survey of Schools).

His formula was,

$$\left[\begin{matrix}\text{The replenishment}\\ \text{ratio}\end{matrix}\right]=\left[\begin{matrix}\text{New male graduates employed}\\ \text{in agriculture}\end{matrix}\right]\div\frac{\text{6 million households}}{\text{30 years}}$$

The replenishment ratio, thus computed, declined from 81% in 1953 to 50% in 1959 and down again to 21% in 1965, although it increased to 29% in 1963 temporarily. The replenishment ratio stands for the ratio of *actually* replenished male labor year by year to the *required* number of labor in order to maintain the level of the pool of agricultural labor force constant.

[15] Masakichi Namiki, "Sangyō Rōdōsha no Keisei to Nōka-jinkō" (Formation of Industrial Laborers and the Farm Population) in *Nihon Shihonshugi to Nōgyō* (Capitalism and Agriculture in Japan) ed., by S. Tōbata and K. Uno, (Tokyo, Iwanamishoten, 1959).

[16] Mataji Umemura, *Sengo Nihon no Rōdōryoku* (Labor Force in Postwar Japan), (Tokyo, Iwanamishoten, 1964).

In Umemura's case, it was computed in such a way that the denominator signifies the number of male labor force to be replenished annually, in order to make feasible the simple reproduction of the normal core of labor force of six million farm households.

If the replenishment ratio is equal to unity, the agricultural labor force can be maintained at a constant level. However, it decreased to 21% in 1965. Once, Namiki pointed out, in view of the decreasing replenishment ratio, that now the land slide is taking place, so to say, in the farm villages, emphasizing that the fundamental transfiguration of agriculture is anticipated to be inevitable. The discussion on this ratio by Namiki is interesting, for this ratio decreases when the growth rate is high and increases when the growth rate is low. Therefore, if the economy grows at a faster rate than before, the replenishment ratio declines rapidly, and the proportion of agricultural labor force will naturally decline. This process of causation reflects mostly the "pull effect" of economic growth in the non-agricultural sectors, and not necessarily the "push effect" from inside agriculture through the innovational transformation of Japanese agriculture.

So far, agriculture has not undergone any fundamental change in the sense of pushing out labor by increasing its productivity through drastic innovation (e.g., the expansion of unit of operation) owing to the still existing abundant labor. However, since labor shortage in the national economy as a whole will be intensified in the future, the mere "pull effect" from outside agriculture will probably be replaced by the "push effect" from within agriculture itself. When such changes occur, the characteristic of the present agriculture as a pool of cheap labor will begin to disappear, and the long, continued dual structure will cease to exist.

If we can speculate in this way, the Japanese notion of agriculture as a sacrificed or exploited industry seems to have been dependent basically upon the labor-surplus situation. If the situation changes to that of labor shortage, the per capita productivity gap between agriculture and non-agricultural sector should naturally be narrowed, and the dualistic gulf between the two sectors would be considerably normalized as we see it in advanced countries. Therefore, although the thesis of the "household-supplementing type" labor emigration may involve somewhat a sweeping generalization, it emphasises essentially the role of agriculture in a labor surplus economy. In this sense, agriculture plays a very important role in a dualistic economy, not only because it provides a tremendous amount of labor supply for the non-agricultural sectors, but also because it does so with a very low wage rate. Thus, the base wage rate in the wage differential in manufacturing may have a close bearing on the income earned in agriculture, particularly when agriculture is in a labor surplus condition, and it presents the basis of the dual structure in the national economy as a whole.

VIII. *Service Industry and Labor Market*

Professor Ōkouchi's household-supplementing type labor theory involves, as already explained, the hypothesis that the level of the pool of agrarian surplus labor will be reduced in prosperity and raised during a depression. Masakichi Namiki presented a criticism that the net outflow of agrarian labor force for 1920–25, 1925–30, 1930–35, and 1935–40 had been almost constant, despite the ups and downs of the business cycle. Ryōshin Minami and Akira Ono,[17] howener, found some waves in the above when they estimated the annual (instead of five-

year) figures. But, what is much more important is not the existence or non-existence of the emigration cycles, but, the pertinent question as to which of the amplitudes is larger in terms of the absolute magnitude as concerns the net emigration of agriculture and that of service industry. My guess is, first, that in view of the debate between Namiki, and Minami =Ono, we shall certainly see cycles in each of the outflow and inflow of rural labor force, if we can estimate each of the above figures. Secondly, it seems to be certain that the service industry has also a characteristic of accumulating a surplus labor force during a period of depression, but pours it out in the prosperity phase of the business cycles.

Table 13 indicates changes in the labor force employed within selected industries among the census years and gives us a fairly clear impression of the role of service industry as being a cushion for the business cycle. On the one hand, for the period 1920-30, when prices were falling almost continually after World War I, the increase in the labor force employed in the manufacturing and construction industries was only 524 thousands (only 22% of that in all industries). Among them about half were absorbed by the construction activity which was very active even during the long period of depression. Therefore, the increase in labor force employed in manufacturing was only 11% of the total increase. On the other hand, the number of increase in labor force employed in the wholesale and retail trades amounted to 1,464 thousands (62% of the total increase), and the same in the service industry was 527 thousands (22%), so the increase in the wholesale and retail trades plus the service industry occupies 84% of the total increase. This means that the two tertiary industries could absorb 84% of the total increase in employed labor force! This is extremely important and worthy of consideration in that even during the long depression years of the 1920's, more than 80% of the total increase in employed labor force was absorbed by the tertiary industry. Naturally, as a trend in economic growth, the proportion of labor force working in the tertiary industry tends to increase. However, the tendency in the 1920's was much more of a cyclical phenomenon, and its scale is strikingly impressive.

TABLE 13. CHANGES IN LABOR FORCE EMPLOYED BY INDUSTRY

—unit: thousand men—

	Increases or decreases				
	1920-30	1930-40	1950-55	1955-60	1960-65
Employed labor force, total	+2,375	+2,890	+3,635	+4,430	+3,938
Agriculture, forestry and fishery	+ 48	− 297	−1,097	−1,875	−2,490
Manufacturing and construction industries	+ 524	+2,144	+1,464	+3,542	+2,632
Wholesale and retail trades	+1,463	− 30	+1,510	+1,447	+1,665
Service industry	+ 527	+ 428	+1,151	+ 754	+1,108

Source: *Census of Population.*

Note: The last, "service industry" is used in a narrower sense, and corresponds to tertiary industry other than wholesale and retail trades, financial institution and real estimate trade, transportation, communication, and other public utilities, and public service.

[17] R. Minami and A. Ono, "Nōkajinkō Idō to Keikihendō tono Kankei nitsuiteno Oboegaki" (A Comment on the Relation of Farm Population Movement and Business Fluctuations) and M. Namiki's, Rejoinder, *Rironkeizaigaku*, September, 1963.

When examining in detail the breakdowns of the increase in employed labor force, we see quite a number of occupations which could easily absorb the unemyloyed persons. The rate of increase in male employed labor force for 1920–30 was 52% for green-groceries, 47% for fish dealers, 80% for meat dealers, 12% for soft drink and alcoholic beverage sellers, 202% for confectioneries and bakeries, 54% for tea dealers, 66% for china- and glass-ware sellers, 93% for leather and its product sellers, 17% for woven fabrics and other textiles sellers, etc. It is thus evident clearly that the surplus labor was absorbed in large magnitudes by these service industries.

On the other hand, it is also impressive that the employed labor force indicated only 0.1% increase in agriculture. From this, we may infer at least that we did not have a large amount of inflow of labor force from the non-agricultural sectors into the agricultural sectors during this depression. While the increase in labor force employed in manufacturing was only 5.9%, that of the wholesale and retail trades amounted to 55.2%. The fact that about 2.3 millions of the increasing labor force were absorbed by the tertiary industry, however, is not a normal long-run process which accompanies the economic growth, but rather a highly characteristic aspect of a depression phase.

According to Table 13, we have a contrary situation in 1930–40 as compared with 1920–30, for the increase in the labor force employed in the manufacturing and construction industries then occupied 74% of the total increase. In the wholesale and retail trades, we see an absolute decrease. Moreover, though probably the development of the war economy may also have had some influence, this decrease reflects the cyclical tendency to a great extent, that, in general, the labor force in the service industry tends to swell during a depression and tends to decrease during a prosperous period. This seems to suggest that the service industry has played a much greater role as a pool of surplus labor than has agriculture. Although the above is an exposition only of a cyclical aspect of the service industry, it can be expected that it also has a secular aspect. In view of the tremendous amount of a small unit of the wholesale and retail trades, the service industry seems to have taken the role also of a reservoir for the secular, disguised unemployment. Consequently, as we come down to the later period, it can be presumed that the role of the service industry as the pool of the reserve army will become larger and larger as compared with that of agriculture.

The postwar data also tends to substantiate somewhat a similar conclusion. The growth rate of a real *GNP* was 7–8% for 1950–55. When the economy moved from this phase to the next, 1955–60, as the growth rate increased up to 9–10%, we see drastic changes in the incremental composition of labor force employed among industries. An increasing outflow of labor from the agricultural sectors has proceeded at a phenomenal scale and with an accelerated speed between 1950–55 and 1960–65. On the one hand, the incremental proportion of labor force employed in the manufacturing and construction industries in the 1950–55 period was 40%, but it increased up to 80% in the 1955–60 period. On the other hand, the same incremental proportion of the wholesale and retail trades and the service industry (in a narrow sense) decreased from 73% (in the former period) to 50% (in the later period). After World War II, we have had no such long, continued depression as we had experienced in the prewar period, but it is worthy of notice that in the two phases of economic growth, both having conspicuous different growth rates respectively, we see a considerable difference in the incremental proportion of employed labor force absorbed by the tertiary industry.

In the 1960–65 period, which was characterized as an investment stagnation phase, the

incremental proportion of employed labor force in the manufacturing and construction industries decreased to 67% from 80% of the 1955–60 period. On the other hand, the corresponding ratio increased from 50% to 70% in the wholesale and retail trades and service industry. These facts, derived from Table 13, again make clear the cyclical nature of the tertiary industry already explained.

Mataji Umemura[18] called the former period the "process of the accumulation of the reserve army of the labor force," although here the word "the reserve army" is used differently from the sense in which Karl Marx used. At any rate, he explained that in the former period the annual rate of increase in labor force amounted to a surprising magnitude 3–3.5%, while the natural increase in non-farm labor force as well as the inflow of labor force from farms —which once emigrated from urban to rural districts during the postwar food-shortage period— were almost absorbed by the tertiary industry. According to Umemura, however, the rate of increase in labor force in the latter period fell to 1.5%, and now the "pull-down" or the use of the labor in reserve—which has been accumulating since the former period in the tertiary industry—began to take place. Therefore, the increased rate of labor force employed in the service industry in the latter period was not so conspicuous as it was in the former period. In the transition from the "employment-increase pattern" to the "capital intensity or productivity-increase pattern" growth, and in the shift from the service-industry-oriented pattern increase of employed labor force to the manufacturing-industry-oriented one, we can see the medium-term cycle expressed in the behavior of the employment structure.

IX. *Present and Future of Labor Market*

The Japanese economy is now departing from the long, continued labor-surplus phase and is entering into the labor-shortage phase. Such a change will be the first of its kind for the Japanese economy except for the wartime periods, and it will entail a tremendous transformation of the Japanese economy from now on.

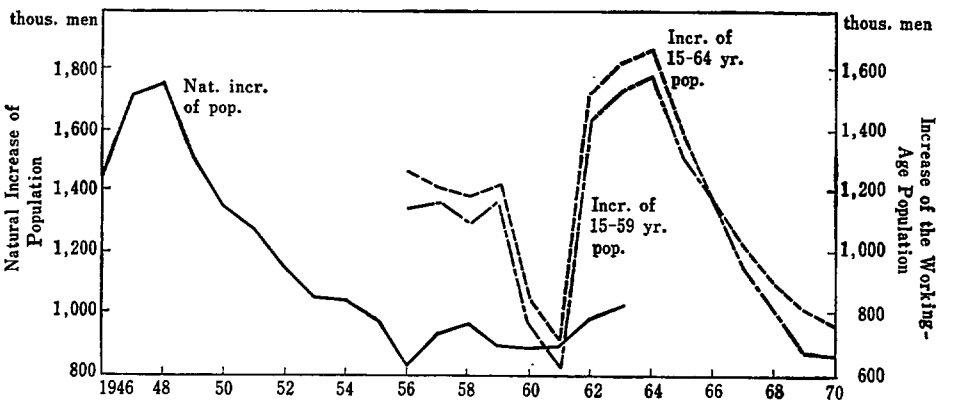
The so-called baby boom which occurred in the immediate postwar years brought about the natural increase in population up to slightly more than 1.7 million, but, thereafter, a rapid decrease in population, as indicated in Fig. 6, and the average of the natural increase in population for 1956–62 fell to about 920 thousands. Naturally, we may expect a wave of an increase in the working-age population after an adequate time span from that of the natural increase in population. As working-age populations, we have selected two magnitudes; those falling in 15–59 age group and those within 15–64 age group. Compared with the peak of the natural increase in population (1948), the peak of the two groups (1964) indicate a time lag of sixteen years. Just around the time when the peak of the "high-rate of growth" of 1960–61 was reached, the rate of increase in the latter fell drastically. This merely reflects a conspicuous decline in the birth rate during World War II with a particular time lag, but it became an important background for an intensified labor shortage coexisting with the rapidly increasing demand for labor due to the "high-rate of growth."

The peak of the increase in the working-age population occurred in 1964, which thereafter is expected to decline very steeply. According to the prediction of the "Institute of Research

[18] Mataji Umemura, *op. cit.*

on Population Problems," it is expected that in 1970 the annual increase of the working-age population will fall to about the same level as 1961. As a matter of course, the labor participation ratio (the proportion of labor force in the population who are 15 years old and over) declined from 70.8% in 1955 to 66.1% in 1964 as a result of the increasing percentage in school attendance. Therefore, the long-run declining tendency of the increase in labor force is destined to accelerate the shortage of labor.

FIG. 6. WAVES OF INCREASES IN THE TOTAL POPULATION AND WORKING-AGE POPULATION



Source: Statistics Bureau of the Prime Minister's Office, *Nihon Tōkei Nenkan* (Statistical Yearbook of Japan); Institute of Research of Population Problems, Ministry of Welfare, "Estimate of Future Population Classified by Sex and Age" (the July 1, 1964 estimate).

The second point which should be taken into account is that the hitherto tremendous exodus of agrarian labor force to non-agricultural sectors may not continue in the future with the present tempo. This is suggested by Table 14. Due to the large outflow of young labor force, which is concentrated around those who are less than thirty years old, the drastic decline of the employed labor force in 1950–60 gives us a striking impression insofar as the younger age group is concerned. Probably, after ten years from now, the labor force pyramid in the primary industry will be predominantly occupied by the older age groups, and then the declining tendency of the number of farm households will necessarily ensue. This will bring about a shortage of labor even in the farm villages, and labor shortage will be extended into every segment of the economy. Moreover, since the non-agricultural sectors have been highly dependent upon the inflow of labor from agriculture, the decline of agriculture as a source of labor force will also intensify the phenomenon of labor shortage in the non-agricultural sectors. Such is the reason why we predict that, in the long-run, labor shortage will be accelerated, say, in the next ten or twenty years.

The third point to be made is, as a long-run trend, the proportion of the tertiary industry in the total labor force will tend to increase. Measuring the above proportion on the vertical axis and the proportion of the primary industry on the horizontal axis, we get Fig. 7. This

TABLE 14. EMPLOYED LABOR FORCE BY AGE GROUPS IN THE PRIMARY INDUSTRY

—unit: thousand—

Age groups	1950	1960	1960/1950
15-19 years	2,403	793*	33.0%
20-24	2,361	1,303	55.2
25-29	4,919	1,617	97.9
30-39		3,300	
40-49	5,454	2,672	93.3
50-59		2,419	
60 years and over	2,079	2,243	107.9

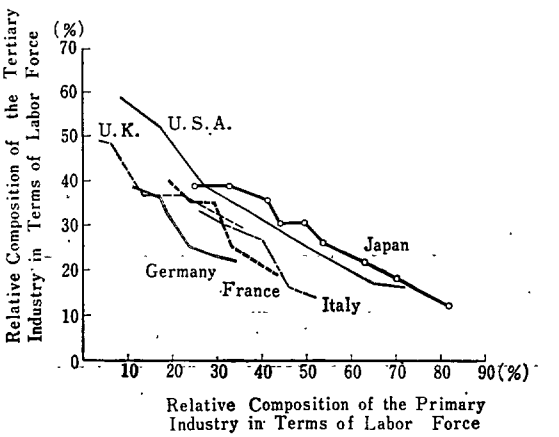
Source: Statistics Bureau of the Prime Minister's Office, *Census of Population*.

Note: * 14-19 years.

takes up ten countries and makes clear that, not only as a time series but also as a cross-section, the proportion of the tertiary industry tends to increase as the level of the economy rises, reducing the proportional share of the primary industry in terms of labor force.

If the proportional composition of the tertiary industry has an inclination to expand in

FIG. 7. PROPORTIONAL COMPOSITION OF LABOR FORCE IN THE TERTIARY INDUSTRY IN INTERNATIONAL COMPARISON



Source: Simon Kuznets, "Quantitative Aspects of the Economic Growth of Nations, II," *Economic Development and Cultural Change*, Supplement to Vol. V, No. 4, July 1957; P. Deane and W. A. Cole, British Economic Growth 1688-1959; K. Ohkawa and others, *The Growth Rate of the Japanese Economy Since 1878*, 1957; The Censuses of Population in Japan; and OECD date.

Note: Great Britain—1801, 1851, 1881, 1891, 1901, 1911, 1938, 1964. (1964=U.K.)
U.S.A.—1820, 1850, 1870, 1900, 1920, 1940, 1963
Japan —1878-82, 1898-1902, 1908-12, 1920, 1930, 1940, 1955, 1960, 1965
France —1866, 1901, 1921, 1931, 1964
Italy —1871, 1881, 1936, 1960, 1964

terms of labor force, this will play another part in intensifying the shortage of labor in the future. Some will be apt to argue that even if the labor shortage becomes more intense, mechanization and consequently the increase in productivity will be a cure for it. But it is almost beyond doubt that in the tertiary industry the increase in productivity tends to be far behind that of the secondary industry, except in the areas of transportation and communication. The extent to which the increase in productivity in the tertiary industry is possible is limited within a narrow range, and the increasing share of the tertiary industry in the labor force will be an additional factor accelerating the labor shortage. Of course, we do not deny that in many sectors of manufacturing, the phenomenon of productivity increase will continue to exist, but we must take into account the fact that the most growing industry, the machinery industry, in a wider sense, is essentially more labor-intensive when compared with other segments of the manufacturing sector. The Japanese economy is thus destined to run into the phase of labor shortage, due to the interplay of the above three factors, and her growth rate of *GNP* is likely to be reduced owing not only to the direct effect of the labor shortage, but also due to the indirect effect of the rise in prices, particularly those of commodities which is more labor-intensive. The latter effect, if dominant, will reduce the growth rate of exports, and also the domestic growth rate by suppressing the balance-of-payments ceiling.

The labor shortage which was already beginning from around 1959 has deeply influenced the wage differential, the consumer prices, etc. Let us, for the time being, check these phenomena, attendant upon the increasing shortage of labor. Table 15 indicates the increasing shortage of labor by two indicators. The ratio of the effective new demand for jobs to the effective new supply of jobs (from now on, it is termed as the "demand-supply ratio") is increasing from 0.32 in 1958 to 0.63 in 1965 according to the general statistics of the labor exchange, although the extent of increase must be discounted in view of the revised statistics given in 1962. In relation not only to middle school but also to high school graduates, we see a rapid increase in this ratio, reflecting the intensification of the shortage of labor. The realization ratio (the new employment divided by new demand for jobs), on the other hand,

TABLE 15. DEMAND AND SUPPLY OF JOBS AND REALIZED RATIO

	Labor exchange (general)		Middle school graduates		High school graduates	
	New demand for jobs / New supply of jobs	Employment realization ratio	New demand for jobs / New supply of jobs	Employment realization ratio	New demand for jobs / New supply of jobs	Employment realization ratio
1958	0.32	41.9%	1.2	60.8%	1.1	55.7%
59	0.43	34.8	1.2	63.5	1.1	54.2
60	0.59	29.2	1.9	43.7	1.5	47.2
61	0.71	23.3	2.7	31.4	2.0	37.2
62	0.67	22.0	2.9	29.6	2.7	30.1
63	0.71	18.3	2.6	32.9	2.7	30.3
64	0.72	15.7	3.6	25.3	4.0	21.7
65	0.63	18.6	3.7	24.8	3.5	21.6

Source: Ministry of Labor, "Shokugyō Antei Gyōmu Tōkei" (Statistics on the public employment security service).

Note: Employment realization ratio=(the number of new employment)÷(new demand for jobs).

indicates a decreasing trend in statistics denoted in Table 15, showing thereby an increasing tendency of a failure for employers to satisfy their demand for labor due to the shortage in job positions. In such a situation, the number of the actually unemployed decreased from 650 thousands in 1959 to 400 thousands in 1963.

The interscale wage differential in manufacturing has been reduced in the new phase. This has already been shown in Table 3. The ratio of average wages in 4–9 employee compared with 1,000 employees and over was 42.3% in 1951, and expanded to 37.8% in 1958, but in 1962 it began to be reduced to 50.2%.

FIG. 8. ANNUAL CHANGES OF WAGES BY SIZE OF ESTABLISHMENT IN MANUFACTURING

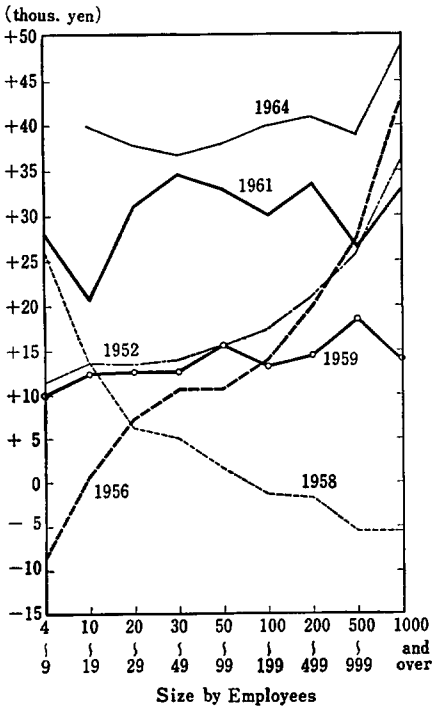


Fig. 8 depicts annual changes of average wages by size of establishment according to the *Census of Manufactures*. In 1952 and 1956, the curves slope upward to the right, indicating that the higher the size of establishment, the higher the increase in average wages. Although the 1953–54 curves are omitted here, their shapes are similar. And, the slope became steepest in 1956 during the so-called "Jimmu" boom. However, in the 1958 depression, a perfectly opposite slope (rising to the left) appeared. This may be due to the fact that quite a few establishments reduced their scales, and therefore, the average wages went up relatively due to their downward shift in scales. Further, it is expected that the reduction of bonus payment was higher, as we view the larger establishments. The curves remain with an upward slope

(to the right) until 1956 but tend to become horizontal in shape from 1959 onwards. Since the increase of wages in absolute amount made no systematic difference, this means that the percentage rate of increase of wages became higher in the lower-size establishments. In this sense, the change in the shape of wage curves coincided with the intensification of labor shortage in the labor market.

The narrowing tendency of wage differential so far analyzed may naturally be due to labor shortage. Particularly, most conspicuous was the reduction of starting wage differential. Table 16 gives us the interscale differential in starting wages in relation to the middle school graduates as well as the high school graduates, with the establishments of over 500 employees =100. From this, we can conclude that as far as the starting wages are concerned, the interscale differential has almost disappeared, with no conspicuous differences in recent time.

TABLE 16. INTERSCALE DIFFERENTIAL OF STARTING WAGES FOR NEW GRADUATES (MALE, MANUFACTURING)

—over 500 employees=100—

	Middle school graduates		High school graduates	
	100–499 employees	15–99 employees	100–499 employees	15–99 employees
1957	84.6	78.6	86.9	81.9
58	90.7	83.5	88.0	82.3
59	91.8	87.3	85.9	83.4
60	94.9	91.7	90.1	86.3
61	100.1	97.9	91.4	85.7
62	100.2	100.3	95.3	94.3
63	100.0	101.2	94.6	96.7
64	103.8	106.7	96.7	94.2
65	101.4	101.7	97.9	96.6
66	102.0	103.2	96.7	96.2

Source: Ministry of Labor, *Shinki Gakusotsusha Shoninkyū-Chōsa* (Survey of the starting wages for new graduates). Quoted from the *Rōdō Hakusho* (White paper on the Labor Economy), 1964.

Note: In relation to 1963 figures, it should be born in mind that 1) the overtime service allowances are eliminated, and 2) there is a slight change in the classification of size as concerns the scale of 15-99 employees, so the comparison of 1963 figures with that of before should be carefully made.

Table 17 explains the interscale wage differential, with particular emphasis on the difference of wages by age group. This is the relative wage differential in the size of 30–99 employees, compared with that of 1,000 employees and over. This shows that as far as the age groups of less than 30 years are concerned, the interscale wage differentials completely disappeared. Since the labor mobility of medium and old age workers will be accelerated when labor shortage becomes more intense in the future, we can expect an equalizing tendency even for the groups over 30 years old. However, insofar as the statistics before 1962 on the age groups over 30 years old are concerned, the interscale differential in wages has indicated no tendency of any reduction. However, the relative wages for the 30–34 age group began to increase from 74.8% in 1962 to 86.4% in 1963, and to 90.3% in 1965.

TABLE 17. INTERSCALE REGULAR WAGE DIFFERENTIAL FURTHER CLASSIFIED BY AGE
(Male manual worker in Manufacturing, the ratio of 30-99 employees to 1,000 employees and over)

Age groups	1954	1958	1961	1962	1963	1964	1965
Less than 18 years	82.6	91.4	110.7	106.6	111.0	114.0	109.6
18-19	84.4	86.6	96.4	101.0	104.8	108.1	105.8
20-24	81.7	92.9	98.2	100.2	104.2	108.4	108.1
25-29	75.7	80.3	91.0	92.8	101.5	104.2	103.5
30-34	72.8	73.2	76.1	74.8	86.4	87.3	90.3
35-39	67.7	70.3	71.8	69.6	72.6	77.0	77.7
40-49	62.4	61.9	63.3	64.6	67.1	71.0	70.8

Source: Ministry of Labor, *Kojin Chingin Chōsa* (Survey on Personal Wages) 1954; *Chingin-Kōzō Kihon Chōsa* (Basic Survey on Wage Structure) 1958; *Chingin Jittai Sōgō Chōsa* (Comprehensive Survey of the Actual Situation of Wages) 1961; and *Tokutei Jōken Chingin Chōsa* (Survey of Wages under Specific Conditions), 1962 and 1963; and *Chingin-kozō Kihon Tōkei Chōsa* (Basic Statistical Survey on Wage Structure) 1964 and 1965.

But in order that the equalization of wages should proceed even for the medium age groups and over, the transfiguration of wage and employment systems should take place. This would not take place without tremendous frictions. As long as the "life-time commitment" employment system and the "length of service" wage payment system prevail in the large enterprise sector, the wage equalization between large enterprises and small-medium enterprises will be extremely difficult. However, the strenuous pressure of labor shortage should at last break through the institutional rigidity. It will be necessary that the high capacity to transform—which has been displayed during the period of "high rate of growth" —should be also exhibited in this sphere in the coming several years.

Our labor market with cheap, abundant labor has so far supported the high rate of growth, while the increasing labor shortage, as a recent tendency, will be a bottleneck to the rapid growth of the economy from now on. The small-medium enterprises will face a more and more difficult situation in that their required labor cannot be provided with from sources within the prefecture, because the larger enterprises absorb such sources within the prefecture. Moreover, another problem is that there is insufficient regional mobility of labor. Thus, the enforcement of government policy for the mobilization of labor will become more and more important. In a labor-shortage situation, when the locations of industries are set up, the difficulty or easiness of recruiting labor in relation to the locations themselves should be taken into account. In such a phase, the modernization of small-medium enterprises, with higher capital intensity, will become increasingly urgent, coupled with their financing. Policies concerning the acceleration of the following measures—regional labor mobility, the structural improvement of agriculture, the housing construction, the location of enterprises, the financing of small-medium business for their modernization, the fostering of the skilled and the technicians in shortage, etc.—will become more and more important, although they will not be so effective when independently followed.

In the event that these policies turn out to be ineffective, we may have a menace of cost-inflation, i.e., the money-wage increase surpassing the physical-productiuity increase. This is

a most serious problem which will affect the speed of economic growth. Japan will in the near future go into a world in which not only the "commodity gap" (the excess demand for products) but also the "factor gap" (the excess demand for factors) will tend to bring about inflation. Since causes of inflation will become multifarious, the policy should also be based on such, and not be restricted to a fiscal and monetary policies alone.

Thus, whereas a highly expansive policy might have been valid where labor is still abundant, in a labor-shortage situation, the policy should be oriented much more toward stability, because even if the price stability deters the growth to some extent in the short run, its reasonable stability will be a basis of keeping the economic growth steady and continually high in the long run. "The higher, the better" type growth policy would be good in a labor-surplus situation, but it will tend, in the long run, to accelerate inflation in a labor-shortage economy. Japan is moving from the former to the latter phase. Since the wages will tend to increase in parallel with physical-productivity increase in large enterprises, the wages will be apt to surpass the physical-productivity increase in smaller factories as well as in service industries where physical productivities cannot but remain far behind. Such being the case, the labor market involves troublesome problems, when it is viewed from the policy aspect toward the future.